



November 1, 2022

The Honorable Representative Brianna Titone
Chair, Joint Technology Committee
State Capitol Building, Room 029
Denver, CO 80203

RE: OSPB Submission of the FY 2023-24 Prioritized IT Capital Construction Requests

Dear Chair Titone,

As required by Section 24-37-304 (1) (c.3) (I), C.R.S., the Governor's Office of State Planning and Budgeting (OSPB) is providing the Governor's FY 2023-24 IT capital construction prioritized recommendations to the Joint Technology Committee (JTC). The package includes a prioritized list of recommended IT capital projects for all state departments. In total there are six prioritized projects using General Fund dollars transferred to the Capital Construction Fund and three projects using non-General Fund sources. In total OSPB has prioritized projects totalling \$114.2M total funds, of which \$56.5M originates as General Fund, \$6.5M cash funds, and \$51.2M federal funds.

Attachments to this letter include the OSPB prioritization of IT capital construction projects. The Stationary Sources Data System Modernization is now prioritized as a cash funded project using available funds in the Stationary Sources Cash Fund and the OIT Tech Debt request has been modified to address the highest impact projects.

The Department of Higher Education (CDHE), along with the Commission on Higher Education, reserves the ability to submit a prioritized list to the JTC that may include projects not recommended by OSPB. The department will submit these requests directly to JTC. Thank you for your consideration of the attached requests. Please contact me with any questions or concerns.

Sincerely,

Megan Davisson

OSPB Deputy Director for Budget



Cc:

Senator Jeff Bridges, Vice Chair, JTC

Representative Mark Baisley, JTC

Senator Chris Kolker, JTC

Representative Tracey Bernett, JTC

Senator Ray Scott, JTC

Luisa Altmann, Legislative Council Staff

Carolyn Kampman, Joint Budget Committee Staff

Summary of IT Capital Construction Requests with OSPB Prioritization

FY 2023-2024 IT Capital Requests						
OSPB	Agency	Project Name	FY 2023-2024			
			TF	GF	CF	FF
Prioritized Projects*						
1	DPA	Payroll Modernization	14,249,228	14,249,228	0	0
2	HCPF	Medicaid Enterprise Solutions Re-Procurement	52,552,516	6,043,541	0	46,508,975
3	DOC	DeCORuM	10,054,231	10,054,231	0	0
4	DHS	OBH Information Management Systems and Data Reporting	2,093,951	2,093,951	0	0
5	CDPHE	Vital Event System of Colorado (VESCO)	1,410,064	1,410,064	0	0
6	OIT	Tech Debt	22,655,995	22,655,995	0	0
7	CDPHE	Stationary Source Data System Modernization	4,530,695	0	4,530,695	
8	CDLE	Conveyance Database	693,000	0	693,000	0
9	CDLE	Vocational Rehab Case Management Modernization	5,912,331	0	1,259,327	4,653,004
Total Prioritized Projects			\$114,152,011	\$56,507,010	\$6,483,022	\$51,161,979
Non-prioritized Projects						
	DOC	HRMES Replacement	2,605,507	2,605,507	0	0
	DHE	CSU Network Hardware Upgrade	2,992,445	2,244,053	748,392	0
	DHE	Metropolitan State University Network Infrastructure Modernization	2,545,000	2,045,000	500,000	0
	DHE	CCD Classroom and Conference Room Technology	1,731,807	1,627,899	103,908	0

FY 2023-2024 IT Capital Requests						
OSP	Agency	Project Name	FY 2023-2024			
			TF	GF	CF	FF
	DHE	Metropolitan State University/Mines Collaboratively Transforming the ERP/SIS Experience	12,501,069	11,354,456	1,146,613	0
	DHE	Colorado Mesa University ERP Modernization	3,660,000	3,290,340	369,660	0
	DHE	Western Colorado University Next Gen WiFi Collab w/Fort Lewis	1,835,702	1,760,438	75,264	0
	DHE	CCA Improving Server Room	885,833	814,740	71,093	0
	DHE	FRCC Network and IT Security Upgrade	3,800,000	3,420,000	380,000	0
	DHE	UNC ERP Modernization and Cloud Migration	1,346,873	1,291,651	55,222	0
	DHE	CSU Wireless(WiFi) Technology Infrastructure Upgrade	810,550	810,550	0	0
	DOR	Licensing and Case Management Software	1,000,000	1,000,000	0	0

*Italicized projects have been adjusted from October 1, 2022 non-prioritized submission and the revised narratives are included after this page.



COLORADO

Department of Personnel & Administration

Jared Polis
Governor
Tony Ghendrih
Executive Director

FY 2023-24 Request Year-IT Capital Request | October 1, 2022

Signature
Date

FY 2023-24 – Department IT Capital Construction Project: IT-CC-01 Payroll Modernization

Summary of Request	Total Funds	CCF-IT	Cash Funds	Reappropriated Funds	Federal Funds
FY 2023-24	\$14,249,228	\$14,249,228	\$	\$	\$
FY 2024-25	\$17,203,705	\$17,203,705	\$	\$	\$
FY 2025-26	\$15,461,933	\$15,461,933	\$	\$	\$

Categories of IT Capital Projects

System Replacement (costs escalating, failing technology, software or vendor support ended, or new technology, e.g., DRIVES, CHATS)	System Enhancement Regulatory Compliance (new functionality, improved process or functionality, new demand from citizens, regulatory compliance, e.g., CBMS)	Tangible Savings Process Improvement (conscious effort to reduce or avoid costs, improve efficiency, e.g., LEAN, back office automation)	Citizen Demand “The Ways Things Are” (transformative nature of technology, meet the citizens where they are, e.g., pay online, mobile access)
---	--	--	---

Request Summary:

The Department of Personnel & Administration (the Department or DPA) requests IT Capital Construction funds of \$14,249,228 in FY 2023-24, \$17,203,705 in FY 2024-25, and \$15,461,933 in FY 2025-26 to fund the creation and implementation of a payroll modernization on a statewide basis, for a total project cost of \$52,914,866. This request is not a continuation of the HRWorks project that was previously halted; this is a new project that was funded for the first time at \$6 million in FY 2022-23. This request is the second request of an Agile phased approach to modernize the State’s payroll system. This request to modernize the existing payroll system is anticipated to span four years for implementation.

The new payroll system will replace the State’s existing 35-year-old legacy system with a modernized payroll system, allowing the State to standardize processes while incorporating industry best practices.

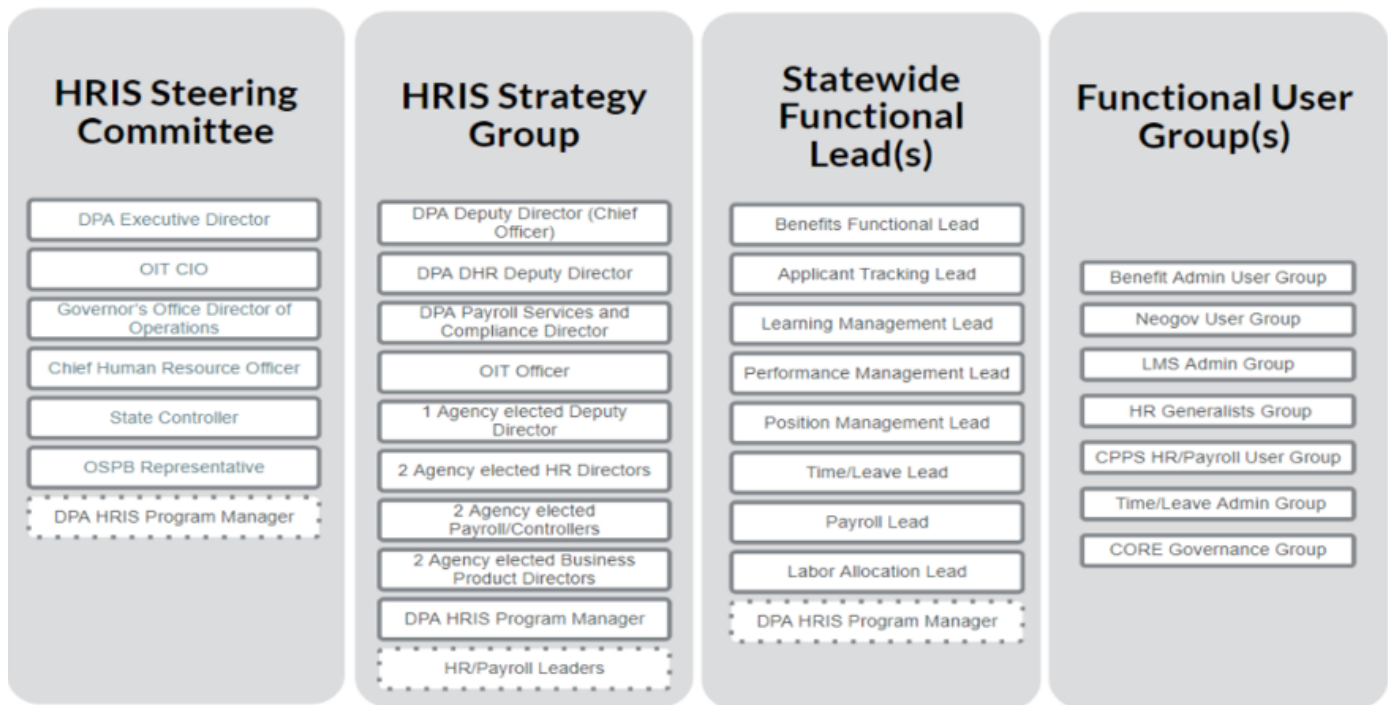
Project Description:

Currently, HR and payroll systems within the State rely on more than 80 individual systems, including a 35-year-old payroll system. These systems require significant manual entry, do not provide consistent data, and are supported by a small team of agency and IT professionals whose skills are increasingly difficult to find in the job market due to the age of the programming language.

Between 2014 and 2020, the Department worked in coordination with the Office of Information Technology (OIT) to develop and implement a new Human Resource Information System (HRIS) called HRWorks, which was designed to replace HR systems across Executive Branch agencies. The project began in July 2014 but was cancelled due to lack of funding in May 2020. The HRWorks project would have provided new time and leave solutions for 11 state agencies, and collected a significant amount of information on the current systems, which resulted in a number of statewide standardizations including the creation of a single Fair Labor Standards Act (FLSA) workweek. However, the primary HRWorks systems for payroll and human capital management (HCM) were not fully implemented.

The Department created a new HRIS Governance Structure in 2021 to assess the options and determine the best path forward for a new HRIS. The new HRIS Governance Structure consists of an HRIS Strategy Group, an HRIS Steering Committee, and a Statewide Functional Lead and User Group. The strategy group was tasked with creating the overall strategy and recommending resources, the Steering Committee approved the strategy and resources, while the Statewide Functional Lead, and User Group was tasked with implementing the systems, creating standardizations, and requesting resources. The functional areas include benefits, new employee onboarding, learning management systems (LMS), HCM, payroll, time and leave, and the financial system (CORE).

Table 1: HRIS Governance Structure

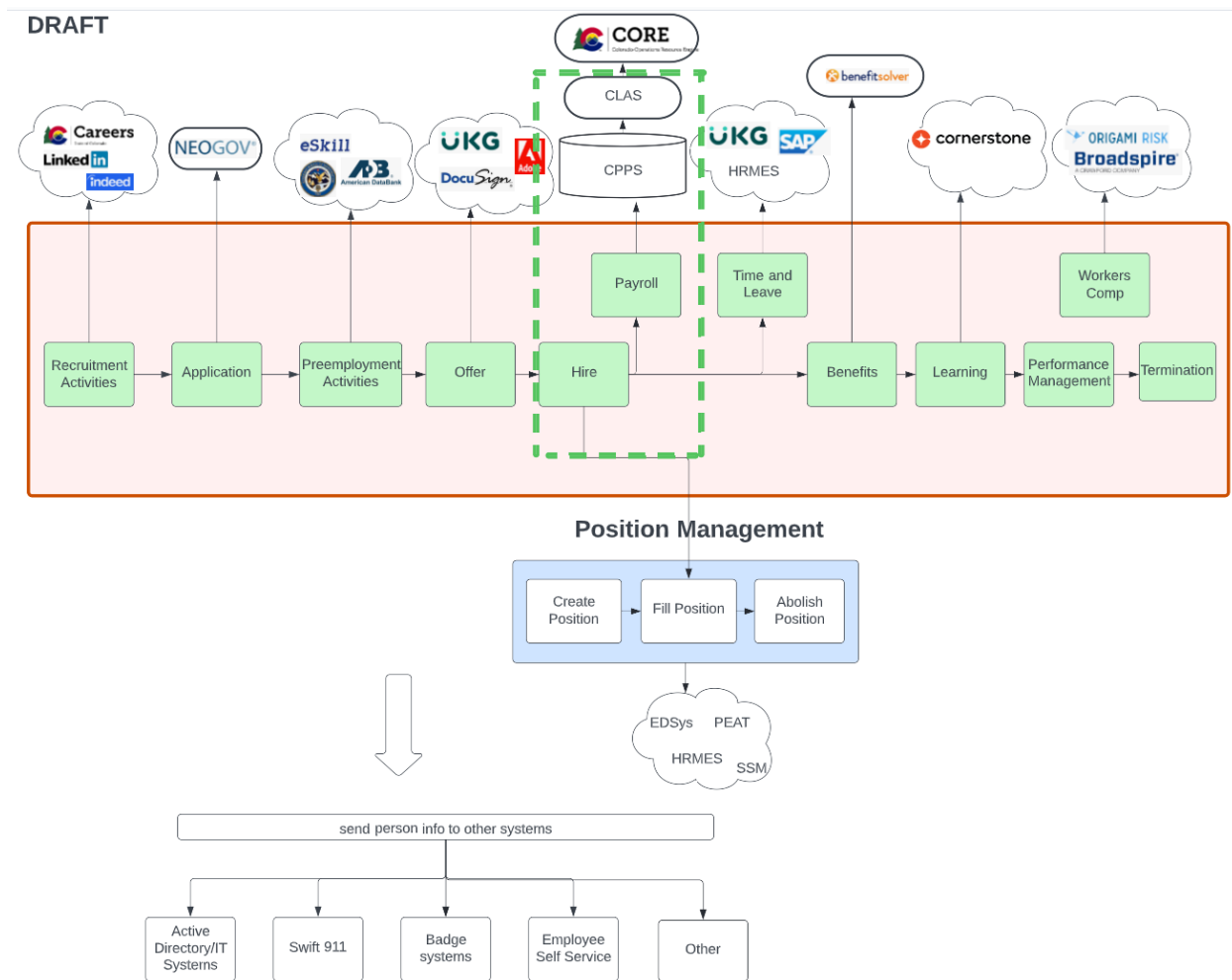


During the first half of 2021, the Department completed a series of internal assessments with HR Directors, Information Technology (IT) Directors, Business Product Directors, and Payroll Professionals/Controllers. Based on these assessments, the primary challenges within the current HR systems include, but are not limited to:

- Reporting/Data Accuracy and Consistency - Currently there is no single source of truth, current processes are very time-consuming, and there is an inability to run ad-hoc reports. Most data reporting is extremely manual and challenging due to inconsistencies.
- Lack of integrations across multiple platforms, systems, and with Colorado Personnel Payroll System (CPPS) - Due to the lack of integrations, there are several tasks requiring manual data entry, duplicate entries and processing.
- Electronic Records Management System (Personnel Files) - Many agencies currently maintain paper filing systems. Agencies may have onboarding solutions that work well for them, but still require multiple manual entries.
- Timekeeping - Some agencies are currently unable to move to a biweekly payroll due to their timekeeping solution limitations, some agencies are still using paper timesheets, and agencies employing personnel in 24/7 workcenters have challenges with existing timekeeping systems.
- Personnel/Position/Performance Management Systems - Existing systems require manual data entry and duplication of entries, and existing systems lack a workflow and approval process.

In addition to this outreach, staff conducted a high-level assessment of the stability of current HRIS applications. While most existing HRIS applications need to be upgraded or replaced, some are more critical than others. Critical needs include CPPS, EDSYS (HCM), Human Resources Data Warehouse (HRDW - reporting), several agency-specific time and leave management systems, and certain versions of Kronos (time and leave). Lower priority applications for upgrade or replacement include BenefitSolver (benefits), NeoGov (onboarding), certain versions of Kronos

(time and leave), and most learning management systems (LMS). This request focuses on the most critical need for the State, a modern payroll system. It is important to note that this request represents the second request in a phased modernization of a full-scale HRIS. The Partnership Agreement requires the state to pursue an HRIS system that will support EDI efforts and will capture the demographic data about employees in order to analyze equity in hires, rewards and recognition, promotions and training opportunities so including HR in this scope helps show this effort. This will also support the Department's wildly important goal of being an employer of choice in the state. The proposed scope of payroll modernization is illustrated in the graphic below:



The Department estimates that implementation of a new payroll request of \$52.9 million will cover the following:

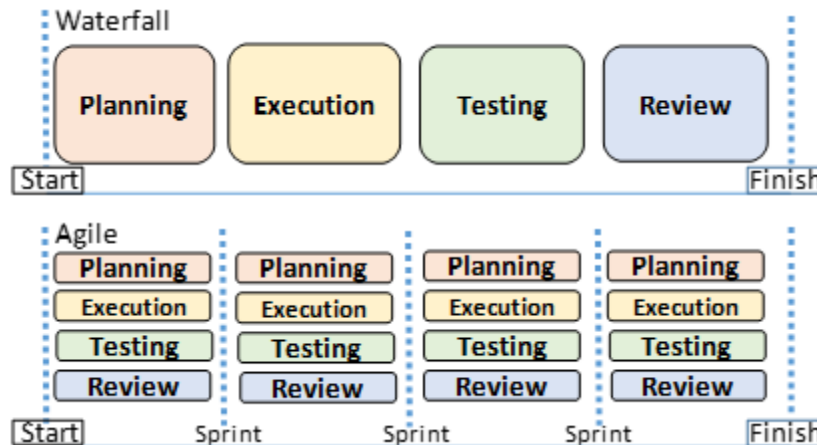
- Term-limited Staffing for the Payroll Agile Development Team.
- Operating expenses for the new staff, including telephone expenses, laptop, docking station, monitors, office suite software, and office furniture.
- An API/Integration Architect Consultant to help with the integration aspects.
- A Payroll/HCM Consultant to assist with the selection and negotiation of the platform.
- Platform usage costs.
- Independent Verification and Validation (IV & V), as required by OIT.
- Payroll and Platform specific training.

- Foundational activities, including Project Management Office (PMO) and Organizational Change Management (OCM) strategy development and execution, business and procurement alignment, and enabling IT strategies.
- Vendor implementation activities, including configuration and deployment of the payroll replacement.
- Inflationary costs
- A 10% contingency.

While this request includes the full estimated vendor expense for the payroll solution, the implementation will be done incrementally using an Agile methodology. The staffing resources needed to implement additional functionalities, once the Payroll system is complete, will be requested through subsequent operating or capital decision items. In addition, licensing and subscription costs once implemented, as well as other maintenance costs are not contemplated in this decision item. Based upon market scans, ongoing licensing and subscription costs are anticipated at \$3.5 million annually following system implementation.

Agile Methodology

Agile is a project management approach that focuses on rapid life cycle development of a project through short iterations, referred to as sprints. It features frequent demonstrations and check-ins with customers to get immediate feedback to be used in the next sprint. The Agile approach requires much more interaction with the customer and more frequent feedback than the traditional waterfall approach. Therefore, teams have much better information to go on with each step. Traditional project management, or “waterfall,” is a very linear approach; one phase falls under the next, and the next, and so on until a project is completed. The customer really doesn’t get to see the finished product until it is finished and the project is complete. After that, if any changes need to be made, it’s very much a “start from scratch” situation. The main benefit of Agile over waterfall is the ability to change dynamically to the customers’ wants and needs. In addition, points of failure or weakness are identified in real time with the implementation of the project, which allows the development team the opportunity to fix issues before they can poison the remainder of the project. The graphics below represent the waterfall methodology vs. Agile.



The Agile methodology provides many benefits when implementing a major IT system upgrade. When comparing the Agile methodology to the traditional waterfall model, Agile development

tends to deliver better visibility, adaptability, and value in the beginning of the process and reduces a lot of risks during the project. Agile virtually eliminates the chances of absolute project failure by breaking down the work into smaller sprints, allows for transparency and customer engagement throughout the entire project, and produces deliverables in incremental, rapid cycles which are thoroughly tested to ensure quality and functionality.

Ongoing Operations

Following the completion of the payroll implementation, the Department will utilize a common policy methodology to allocate all of the expenses related to the ongoing operations of the new system to user agencies. The budget request to develop the payroll system common policy will be submitted as a decision item in an upcoming fiscal year, when the resources and projected expenses are known. The Department notes that the current staffing levels requested cover the Agile development and the Payroll functions. When additional functionality is developed and deployed in HRIS, additional staffing will be requested through the normal budget process.

Background of Problem or Opportunity:

The State's current payroll system is 35+ years old based on COBOL mainframe technology. The system is not flexible to meet the current data needs of the state and the system is supported by a small team of agency and IT professionals whose skills are increasingly difficult to find in the job market due to the age of the programming language.

Justification:

Payroll System

If this request is not approved, the State runs the risk of having its antiquated payroll system, CPPS, fail. The state currently relies on CPPS to pay 33,000 + employees. CPPS processes \$180 million in employee payroll each month which is \$2.2 billion annually. The CPPS system has not been supported by a vendor since 2014, and is an unreliable system as it is currently down approximately ten percent of working days. If the CPPS system experienced a significant failure, the State would be left with no alternative to pay employees, which could create significant hardship for many, place the State in violation of state and federal laws, and jeopardize federal participation in many state programs. This would also disproportionately affect State employees and significant staff time and costs would be needed to recover system data or implement a new system on an emergency basis. The implementation of this payroll modernization project is vital to ensuring the State can continue to pay employees, as it is unknown how long CPPS will continue to be functional. In July 2022, the tape backup of the payroll system failed, and mainframe storage was fully depleted. Had this not been resolved, this would have required the Department to pay employees via CORE GAX, overnight checks to employees, and would not have met documentation requirements for federal reimbursement.

As detailed below, a primary payroll system functions include:

- Position record and associated Chart of Accounts (COA)
- Org structure (tied to positions)
- Employee record including demographics, and tie to position
- Employee classification and compensation tied to statewide structures

- Time/Payroll schedule information
- Time and Leave inputs for Payroll (including COA overrides)
- Deductions and Benefits inputs for Payroll (including associated accounting)
- Time and Leave accrual (calculated by system)
- Leave requests and absence history
- Payroll Gross and Net (calculated by system)
- Ancillary earnings
- Payroll Accounting distribution
- W2 info
- Self-service access to all of the above deemed appropriate to share with the employee

Some examples of data that will not be included are as follows:

- Talent Acquisition: Recruiting, Onboarding with associated demographics
- Talent Management: Performance, Evaluation, Learning

Additionally, information needed to support EDI efforts such as salaries, promotions, title changes, training and development opportunities, overtime, and certain demographic data would not be captured by the payroll system as they are part of an HRIS system. The deployment model and the following figure represent the concept for in-scope payroll modernization components, as well as a data warehouse.

Payroll Functional Deployment Model

Colorado's In Scope capabilities for implementation of Mega-Suite Application

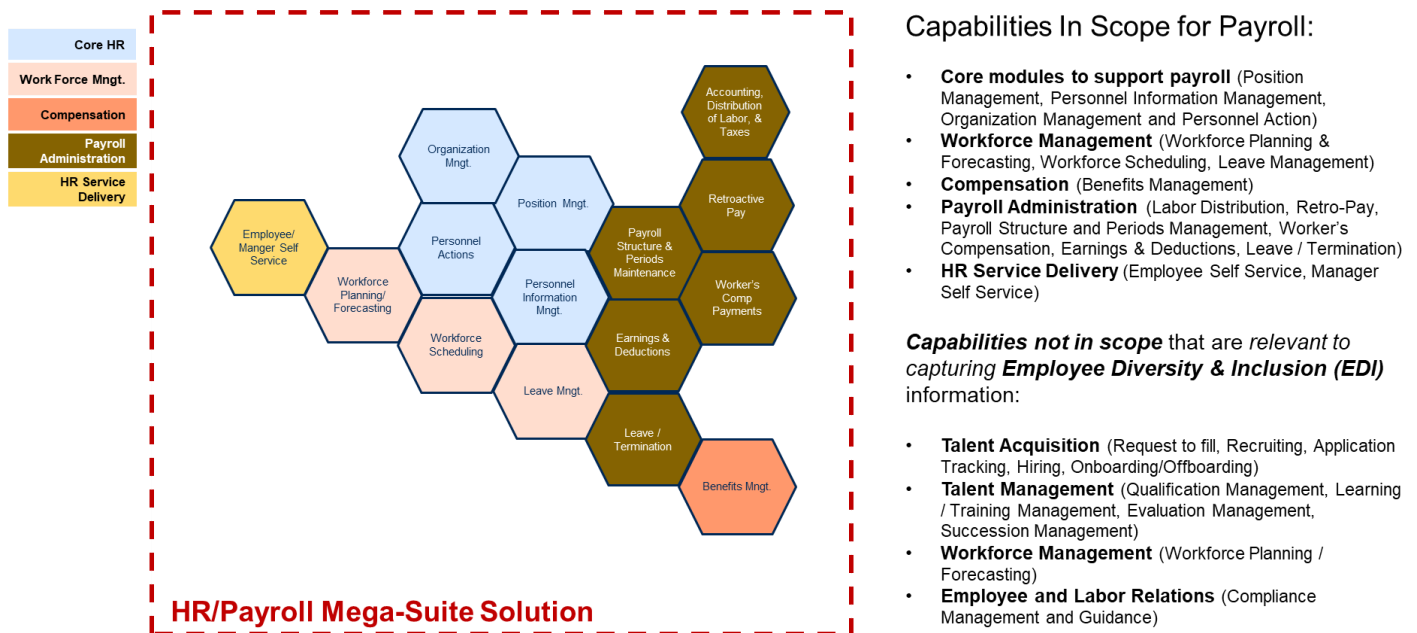
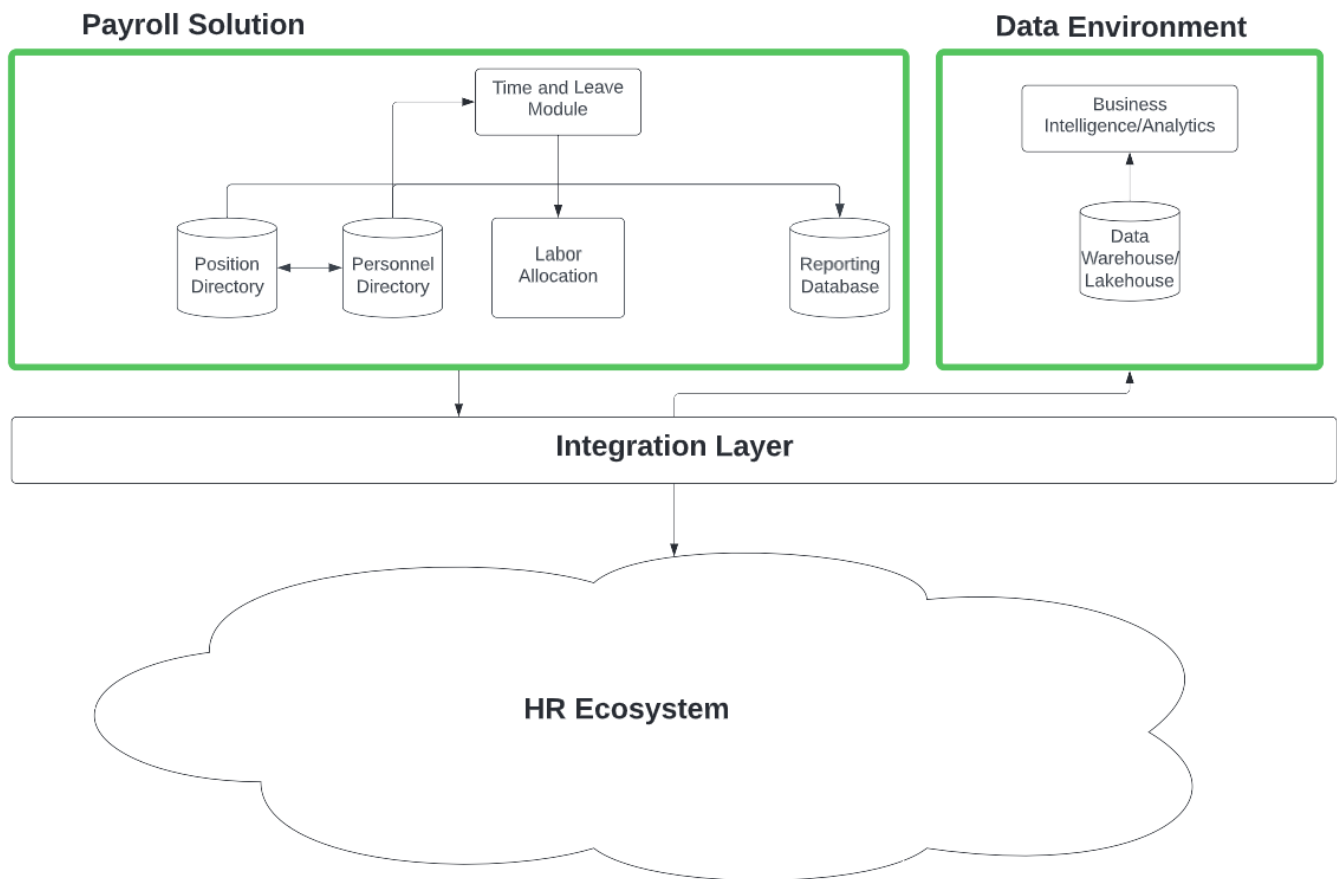


Figure 3: Conceptual Components for New Payroll Solution and Data Environment



Alignment with OIT Best Practices

OIT has been involved with the planning for the new HRIS since day one, and will continue to partner strategically and tactically to create a comprehensive, accurate project assessment and budget estimate for the implementation of a statewide HRIS system. These steps include existing system applications inventory, business process inventory and review by agency, and development of business requirements.

Cost Savings and Performance Outcomes

The department anticipates that the implementation of an HRIS will reduce the reliance on technologically out-of-date systems and will significantly reduce inefficiencies statewide. While several state agencies rely on legacy systems with complicated interfaces, other state agencies utilize paper forms and spreadsheets to track human resource information. Elimination of these practices will not only improve data integrity, security and reporting, but will also streamline business processes across the Executive Branch resulting in time savings for many State agencies. The Department anticipates that this request will enable efficiencies and more complex system interdependencies will be eliminated.

Security and Backup/Disaster Recovery

All technology projects follow the project management process prescribed by OIT. This process requires a detailed review and plan for data security and disaster recovery. These considerations are required as a part of the project implementation process.

Business Process Analysis

The Department, in coordination with OIT, engaged in a significant due diligence process prior to the development of this request. The HRIS Governance Structure was created and the team worked with consultants to review what was done in HRWorks and determine the best path forward. The Department reached out to Executive Branch agencies to conduct a needs assessment and determine the most critical needs; the needs assessment identified current tool and application pain points, prioritized needs, and current work within HRIS across agencies. The information from the needs assessment was shared with the consulting partners to detail the available options and different models for ongoing HRIS integration and ownership. The information gathering from brainstorming activities and assessments identified key themes:

- Access to data is a primary concern across agencies.
- The Department should provide consistent processes, services, and data governance.
- Agency HR teams can be the stewards of data to facilitate accuracy.
- It is critically important for a payroll system to support the unique needs of agencies.

Risk and Constraints

As with any major project or system upgrade the risks associated with this project include system glitches and the potential for missed content or lost functionality in the implementation of the system. To help avoid these issues, the Department has worked closely with OIT from the beginning to understand the security needs, system integration needs, and data protection requirements. OIT has been involved in the ongoing conversations about this project and will partner with the Department in the design and implementation of the system.

The Department will work closely with OIT around the effort to replatform CPPS as part of the Mainframe Decommissioning project.

Additionally, the Agile methodology reduces risk incrementally with every iteration completed. With the traditional waterfall method, the risk remains high until the project has been completed. The Agile methodology has several parts of its framework that promote risk mitigation:

- Sprint Durations: Sprint durations can be adjusted according to the level of risk. For projects with higher risk, sprint durations can be shortened. Shorter sprints build in more frequent cycles for each of the deliverable features, which allow the Agile team to revisit the planning cycle more frequently and determine accuracy in less time, making it more predictable and therefore reducing risk over time.
- Retrospective: At the end of each sprint, the Agile team reviews all the events and processes that went well and not so well. These results carry forward to the next sprint as “lessons learned.” Since this happens with each sprint, the frequency of those

retrospectives gives everyone on the team the opportunity to tackle ineffective processes, and the chance to implement more effective ones. This reduces the risk of being wide open to possible wasted initiatives.

- Backlog Grooming: The ongoing process of backlog grooming allows the possibility of reviewing and revising the priority and importance of the features the Agile team will build into each iteration. This process is done in conjunction with the inputs from the entire Agile team and stakeholders. The more frequent the backlog grooming takes place, the more risk of ROI loss can be reduced by not implementing lesser-valued features, and implementing the prioritized features with immediate returns from the Agile solution.
- Promoting Transparency: When all stakeholders are engaged in a project, and expressing their intents and expectations, there is less risk of team members going off track and building an unwanted set of deliverables. Much of the transparency comes from what is gathered through the accumulation of the events that take place during the sprint such as: sprint planning, standups, sprint reviews and retrospectives. Each event allows the Agile team to know exactly what is going on and the risk of delivering anything less than what all stakeholders expected is lowered.

Success Criteria and Improved Performance Outcomes

Success criteria and improved performance outcomes include, but are not limited to:

- The ability to decommission CPPS, and move away from paper systems.
- Transition more agencies onto a standard pay policy, such as biweekly.
- Improve the data quality and reporting capabilities on a statewide basis.
- Reduce the duplication of work and manual processes performed.

Systems Integration Opportunities

The enterprise-wide payroll system will simplify integration of systems statewide. There are as many as 80 different legacy systems that impact one or more areas encompassed by this request currently in use across the Executive Branch. The Department's proposal will be a single focal point for payroll business processes.

Project Alternatives

As noted above, the Department and OIT evaluated the outcomes associated with replacing disparate legacy systems with a single source of statewide human resource information. An alternative to the implementation of a statewide solution is to continue the practice of disparate systems and paper-based tracking of human resources information. The results of the evaluation indicate that the non-pecuniary benefits of a transition to an enterprise solution are significant, and include the streamlining of business processes and greater ease of reporting statewide information.

In addition, the Department engaged the services of an outside consultant to conduct several market scans to determine the most cost beneficial model to implement a new HRIS. An HRIS system would provide the greatest benefit to the State through improved reporting, time and leave tracking, position management, workforce planning and tracking, benefits management,

training and performance management and will better support EDI goals, the WIG of being an employer of choice, and many provisions of the 2021 Partnership Agreement.

In the scenarios costed, the centralized model is more cost effective than the localized model. Separate procurements add a “premium” of approximately \$1 million to implementation costs. However, a consolidated procurement model does not lend well toward the Agile framework, and the department learned through the implementation of HRWorks that the needs of state agencies are not uniform. The localized model allowed for more instances of fit for purpose among State agencies. Equipped with this information, the decision was made to pursue market analysis for the second option for a localized payroll and HCM implementation with which to develop the cost estimates upon which this decision item is based. It is important to note that the second option assumes that these functions are procured separately under a localized model. As a result, upon project implementation of the payroll modernization, funding to implement other HRIS functions will be required to obtain a full statewide HRIS.

During the market scan phase, the Department costed several assumptions to determine the most cost beneficial method for procuring a new HRIS system. This was also considered in context of the CORE upgrade to determine whether the combination of payroll, HRIS, and a new financial system might possibly yield a lower total cost of ownership for these combined functions. Cost assumptions were developed for:

- 1) A smaller scale HRIS system that would include a basic or “stock” time and leave module for data entry
- 2) A payroll only system
- 3) An integrated enterprise resource planning (ERP) system that would have combined payroll, other HRIS functionality, and contemplated a new financial system to replace the CORE system.

Consequences if not Funded

If this request is not approved, disparate applications across departments will continue to be used for critical human resource functions, making it difficult to track and report information. The lack of a single enterprise HRIS results in inconsistent, and sometimes erroneous, data including time and leave tracking, performance data and general human resource data. Such inconsistencies increase the risk of violations for state and federal policies. While this request does not request funding for a full HRIS replacement, a modernized payroll structure will provide a foundational first step in this direction. While the technological imperative to outdate a legacy system has long existed, the legal and statutory framework has become more pressing in recent years. First, the Colorado WINS partnership agreement states in Article 8.2 that the Parties will “seek funding for a statewide HRIS for Agencies that includes such functionality that will capture the demographic data about employees in order to analyze equity in hires, rewards and recognition, promotions and training opportunities.” While this request does not request funding for a full HRIS system, it does provide the foundational first step in this effort so that the state may ultimately meet the objectives of the partnership agreement. In addition, the State also recently passed SB 19-085, the “Equal Pay for Equal Work Act” that requires specific actions by employers to demonstrate pay equity.

Operating Budget Impact

In order to most efficiently and effectively manage statewide human resources data, the Department and OIT identified a need for review and refinement of existing human resources data. Additionally, the Department believes that training the human resources community on standardized data entry will allow for the most effective tracking of personnel data. Due to the nature of this request being an IT Capital Construction project, ongoing annual maintenance will be necessary to ensure the vitality and stability of the system in the future and will be requested through a future operating decision item.

Accessibility Compliance

The Department will work with any vendors to ensure compliance with Section 24-85-103, C.R.S., which sets requirements requiring non-visual access, and will provide Voluntary Product Accessibility Templates to demonstrate compliance with Section 508, the Federal Standard that is even more stringent than the State statute, providing accessibility for people with limited capacities to see, hear, or exercise muscular control.

Change Management

Change management for the implementation of an HRIS is critical to the ongoing success of the program and project efforts. In partnership with OIT, efforts are underway to define necessary project change management for each functional area that will be impacted by the implementation of an HRIS. Additional change management and technical assistance and training for statewide users is necessary to ensure a smooth transition and to ensure users adopt the new technology in a meaningful way.

The implementation of the new payroll system will be a department IT project and will be managed according to the standards of OIT's Project Management Office. Training on this project will be developed as the HRIS systems are developed, and will include in person training, virtual webinars, technical training for the staff supporting the systems, and end-user training. Testing will occur at various stages of the Agile development process to ensure each sprint is successful before moving on to the next sprint; testing will include user-acceptance, system integration, performance, and data migration. Stakeholder management will include engagement of all levels within the HRIS Governance Structure, as well as maintaining executive awareness of the project.

Procurement

Although the procurement processes have not yet been determined for the HRIS system, the Department has worked with OIT personnel from the beginning of the planning for this project, and will continue to partner with OIT for the procurement of vendors. DPA published a [request for information \(RFI\)](#) in early July to gather vendor input in an equitable manner, gain additional insight before the formal solicitation process, and outline broad State requirements and parameters. Information gathered from this RFI will help the State develop its solicitation for a payroll replacement later in 2022.

Assumptions for Calculations

The Department worked with a contractor to review and vet cost estimates for a statewide payroll system. The contractor conducted a market scan specifically focused on how other

states and large, complex municipalities are handling HR and Payroll modernization, resulting in a rough order of magnitude (ROM) to determine feasibility of funding. The figures provided in table 2 were determined based on the ROM and combined with the State's assessment of payroll needs. The contractor developed a cost/benefit analysis with which the state could compare among the options indicated above. DPA reduced these costs to 1) exclude costed activities that were covered within existing functions 2) exclude costs of ongoing operating and 3) crosswalk vendor assumptions of \$150,000 per term-limited employee into actual FTE costs as determined by the FTE template. The FTE template serves as the crosswalk between the contractor provided costs, and have been adjusted since the initial FY 2022-23 request. In addition, the vendor provided assumptions have been adjusted to reflect inflation to the mid-point, similar to the process used in the physical capital construction process. This process was used to avoid costs of revising the initial vendor scan.

Table 2: FY 2022-23 and FY 2023-24 Summary of Payroll Cost Components

Categorization					Total
	2022-23	2023-24	2024-25	2025-26	
Business Management Activities	240,000	0	0	0	240,000
Organizational Change Activities	100,000	1,497,059	1,497,059	1,122,794	4,216,912
Orchestration Activities Total	660,000	3,739,283	3,484,824	586,555	8,470,662
Implementation	0	5,865,307	6,328,137	5,305,303	17,498,748
Implementation Subtotal	1,000,000	11,101,650	11,310,021	7,014,652	30,426,322
Term Limited Operating Expenses	0	356,473	186,589	100,969	644,031
New Software Subscription Fees	0	5,250,000	3,500,000	3,500,000	12,250,000
Contingency	0	0	0	3,042,632	3,042,632
Implementation + Subscription Fees	1,000,000	16,708,123	14,996,610	13,658,253	46,362,985

Impact to IT Common Policy

It is not anticipated that this request would impact the OIT common policy.

Cost-Benefit Analysis

Implementation of a new payroll system will reduce the reliance on technologically out-of-date systems and will significantly reduce inefficiencies statewide. The tangible (\$) benefit or savings is approximately \$4.5 million for the decommission of CPPS, while the savings associated with the decommission of other legacy systems has yet to be determined. There are several intangible benefits or savings (non-traceable and qualitative) that are listed below:

Business	IT
<ul style="list-style-type: none"> • Workforce Planning • Automating/Streamlining processes (reducing annual entry errors and repurposing resources time) • Performance management and competency management 	<ul style="list-style-type: none"> • Reduction in shadow systems, coupled with the information security features of an enterprise information management platform significantly improve data security by reducing the proliferation of confidential

<ul style="list-style-type: none"> • Time and expense management • Organization visualization • Easily share important information across agencies • Reporting and analytics 	<p>information</p> <ul style="list-style-type: none"> • Complex systems interdependencies are eliminated • Complex legacy point-to-point interfaces are replaced with an enterprise platform that provides a consolidated source of the State's HR information.
--	---

Some of the key benefits of moving to an HRIS include, but are not limited to:

- Eliminating Manual Processes: departments are still engaged in tracking various HR functions with Excel spreadsheets or other manual documents. Even departments with databases for HR and time and leave must manually enter and/or upload data into the State's payroll system. Manual processes are prone to error, lack consistent definition and application across programs, and are effectively data silos that cannot be summarized or queried across the organization.
- Replacing Outdated Technology: The State purchased many of these systems years, if not decades, ago. Maintaining these systems is costly and risk of failure increases considerably as vendors discontinue support of systems and programming languages become obsolete. One such example is CPPS, which is the primary system for processing payroll. When the system was created over 35 years ago, it was written in COBOL - a programming language that is no longer in use. If this system fails, employees will not be paid in a timely manner and the State will jeopardize billions of dollars in federal participation in State programs. This system regularly experiences unpredictable events that bring it down many times each month.
- Improve System Interfaces: All existing interfaces between systems can require extensive manual processing. Each interface represents a potential point of failure as the State is forcing communication between systems that were not designed to communicate at an enterprise level or whose technological gaps are so vast that process execution is extraordinarily complex. To build on the example of CPPS, that system has around 19 different interfaces to other systems, the most important of which is its interface to the State's financial system, CORE. To perform all of the functions necessary to pay state employees and allocate those expenses appropriately across all programs and grants and recognize these expenses in CORE, the State requires two complex interfaces (CLAS and PAM) to manage this information. Essentially, the data starts in CPPS, is transferred to CLAS where agencies perform manual manipulation of time and leave data, then it's transferred to PAM where the data is translated into CORE documents in preparation for upload into the CORE financial system.
- Data availability and homogeneity: A de facto outcome of running 80 separate systems that are processing and reporting similar data is that data definitions and controls are not applied consistently across all systems. The universe of HR data across the State of Colorado is not available to any central authority in a manner that allows the state to identify trends that would drive future cost-savings or cost-avoidance measures. Thus, any "statewide report" requires considerable caveats when reporting the status of the State's workforce to stakeholders. This undermines the State's ability to proactively

identify changes in many areas that can impact cost to the State, including anomalous turnover, high vacancy rates, compensation inconsistencies across State employees, etc.

The weakness and various potential points of failure outlined above represent the majority of the issues the State must address in its goal to modernize its HR systems, but they are by no means exhaustive. The State is in a precarious position with many of the systems and processes it relies upon to carry out critical HR processes, including payroll and labor allocation. If the State does not fund the replacement of the current systems, the State's payroll and HR systems will remain as legacy systems with high probabilities of failure. If the State is successful in its implementation of a full HRIS replacement, it will consolidate the functionality of nearly 80 disparate systems in place across the State, and will be able to monitor many of the HR processes that the State could leverage into additional efficiencies. Together, these changes will allow the State to garner additional efficiencies in its processes, which may lead to future cost savings, cost avoidance, or resource reallocation.

ESTIMATED PROJECT TIME TABLE		
Steps to be completed	Start Date	Completion Date

Supplemental/Budget Amendment Criteria

N/A-Not applicable



COLORADO

Jared Polis
Governor

Colorado Department of Health Care Policy and Financing

Kim Bimestefer
Executive Director

FY 2023-24 Request Year-IT Capital Request | November 1, 2022

FY 2023-24 CC-01: Medicaid Enterprise Solutions Re-Procurement

Summary of Request	Total Funds	CCF-IT	Cash Funds	Reappropriated Funds	Federal Funds
FY 2023-24	\$52,552,516	\$6,043,541	\$0	\$0	\$46,508,975
FY 2024-25	\$36,879,501	\$4,241,143	\$0	\$0	\$32,638,358
FY 2025-26	\$0	\$0	\$0	\$0	\$0

Categories of IT Capital Projects

System Replacement (costs escalating, failing technology, software or vendor support ended, or new technology, e.g., DRIVES, CHATS)	System Enhancement Regulatory Compliance (new functionality, improved process or functionality, new demand from citizens, regulatory compliance, e.g., CBMS)	Tangible Savings Process Improvement (conscious effort to reduce or avoid costs, improve efficiency, e.g., LEAN, back-office automation)	Citizen Demand “The Ways Things Are” (transformative nature of technology, meet the citizens where they are, e.g., pay online, mobile access)
---	--	--	--

Request Summary:

The Department requests \$52.6 million total funds, including \$6.0 million Capital Construction Fund (CCF) and 0.0 FTE in FY 2023-24 and \$36.9 million total funds, including \$4.2 million CCF and 0.0 FTE in FY 2024-25 for a *Systems Enhancement Regulatory Compliance IT project* to comply with state procurement regulations and the Center for Medicare and Medicaid Services (CMS) procurement requirements for the Department’s Medicaid Enterprise Solutions (MES).

The goal of this request is to provide the funding that allows the Department to add or replace MES vendor(s) without being disruptive to Medicaid members, providers, stakeholders, and Department staff. In order to meet this goal, the Department has estimated the costs it would take to transition between vendors in the event a new vendor is selected to manage a current

or future MES module. This request includes funding for the procurement of the MES and covers the core MES and the fourteen modules that fit within the core MES. In addition to the costs directly related to procurement of the MES and its modules, the Department also requires contractor resources to provide transition and implementation support.

Project Description:

The Department's request falls under the *System Enhancement Regulatory Compliance* category. The Department is requesting funding to comply with the state of Colorado contract term limits and CMS federal funding requirements.

The Department is required to procure contracts related to the MES at a maximum term of ten years under state procurement rules. CMS recommends eight years but allows Colorado to follow state procurement rules for the Colorado MES. In addition, CMS requires that MES contracts be procured in a modular format. Federal regulations no longer permit these systems to be procured as a single vendor solution. This request would provide funding to ensure the continual operation of the Department's MES during a transition to new module vendor(s). The Department's modular approach to procurement ensures that the MES and modules provided by multiple vendors meet the Department's evolving needs. All contracts must be competitively bid, and the requested funding would be used to transition the core MES modules and additional required modules from one vendor to another. This would include funding to pay a new vendor to transfer the Department's data into their system, operationalize the module to meet Department needs and facilitate changes to the vendor's technology to fit the needs of the Department. Additionally, the funding would be used for the procurement of the commercial off-the-shelf (COTS) systems, licensing agreements and custom system builds for the MES core and modular solutions. These costs include funding to transition the Medicaid Management Information System (MMIS), the Pharmacy Benefits Management System (PBMS) and the Business Intelligence Data Management (BIDM) vendors as well as additional modules required to operate a state MES enterprise. The modular systems will be required to integrate with the core MES. Within the current MMIS, there are modules for the Care and Case Management tool, Third Party Liability and Electronic Visit Verification modules. There are seven modules within the MMIS, three within the BIDM and four within the PBMS. This request would also fund contractor resources to provide implementation support and ensure the Department stays on track and meets state and federal deadlines.

Systems Integration Opportunities

Well-designed modular system architecture is interoperable, allowing the ability for different systems, applications, or products to connect and communicate in a coordinated, non-disruptive manner. This Services Integration (SI) is increasingly important as CMS guidance trends away from large, single-system implementations in favor of smaller interoperable, interchangeable modular implementations. CMS requires systems to provide seamless coordination, integrations and interoperability with exchanges, public health agencies, human services programs and community organizations providing outreach and enrollment assistance. The Department is currently under negotiations with an SI vendor to perform this role for Colorado. This vendor will play a vital role in ensuring the integration and interoperability of the current and future modular system architecture.

Risks and Constraints

Due to CMS regulations and state procurement rules, the Department must procure the MES vendor(s) before the current contract term dates end. The MMIS, BIDM and PBMS contracts are near their contract term length and the Department must negotiate and implement new contracts with vendors prior to the current contract end dates to ensure smooth transitions to new modules. Additionally, to receive federal funds on Medicaid and Children's Health Insurance Program (CHIP) programs, the Department must follow CMS procurement and the CMS standards and conditions regulations to receive an enhanced federal match. CMS requires that the Department procure the MES through a modular approach. If the Department does not procure MES vendors following CMS regulations, then the Department is at risk of losing federal financial participation (FFP) on all Medicaid and Children's Health Insurance (CHIP) programs.

Operating Budget Impact

Currently, all core and module solutions have a maintenance and operations (M&O) budget within the Department's appropriation. Currently, the Department is not submitting an additional M&O budget request because the bidding process for each Core MES and module is not complete. The Department does not yet know if the current appropriation for each core MES and module would be enough to cover the new contracts. If M&O funding is either higher or lower than current appropriations, the Department would submit an M&O true-up request in a future budget cycle.

Background of Problem or Opportunity:

The Medicaid Enterprise Solutions (MES) currently consists of four core MES solutions and fourteen additional vendor solutions which are provided through sub-contractors in the core contracts or contracted directly with the Department. The core MES include the Medicaid Management Information System (MMIS) or Colorado interChange, supporting the core MMIS functions (e.g., claims processing) and Fiscal Agent services; the Business Intelligence and Data Management (BIDM) system, which provides data analytics services; the Pharmacy Benefit Management System (PBMS), which provides pharmacy management services; and the Colorado Benefits Management System (CBMS), which provides eligibility determination services. Each of these core MES consists of several modules which require Department evaluation and oversight through the procurement process. The CBMS system operates separately from the MMIS, BIDM and PBMS and is not included in this request.

CMS requires states to follow a modular approach in their development of new or replacement systems and evaluates each state's MES procurement planning and process to ensure that the procurement of each MES solution has been effectively evaluated by the state as the most cost-effective long-term solution for meeting business needs. This includes completing an external alternatives analysis with other states and modular solution providers. Additionally, the Department must complete an internal alternatives analysis to identify MES needs that have evolved since the last procurement in 2012 with a system that went live in 2017. This process must be completed prior to the procurement beginning and may result in the selection of new MES vendors. In 2012, the Department began the procurement project known as Colorado Medicaid Management Innovation and Transformation (COMMIT) and selected three vendors to manage the claims processing, data warehousing and payment components of the MES. Hewlett Packard (HP) was selected to operate the MMIS, Truven was selected to operate the BIDM, and Magellan was selected to operate the PBMS.

The Department is currently in the process of procuring the MES core and modular solutions as the PBMS contract term end date is October 2025, the MMIS contract term end date is April 2025, and the BIDM contract's end date is June 2024. The procurements for the MES are currently underway, with the PBMS expected to complete in October 2024 and the BIDM and MMIS scheduled to be completed in June 2025. The Department is required to select the most compelling and cost-effective vendor for the work, which could result in multiple core or modular solutions being transitioned to a new vendor. An individual MES transition from one vendor to another would result in the need for funding to transition data, data models and operational processes from the old vendor to the new vendor. The Department does not have the funds to transition to a new vendor within the current MMIS appropriation. Without additional funding, the Department would not be able to fund transition activities for a new vendor if one is selected during the upcoming procurements.

Justification:

The Department is required by state procurement regulations and CMS guidelines to progress through a competitive procurement process for the MES. In order to receive enhanced federal matching funding for development, maintenance, and operations, the MMIS as well as other core MES and modules must meet all applicable standards and conditions, including modularity. Depending on the outcome of the MES core and modular procurement, the Department may select a new vendor(s). If a new vendor is selected, then the Department would be required to fund two separate vendors at the same time; one to maintain current operations, paid with existing appropriations, and one to enhance the new solution to meet the Department's needs prior to the transition of data and operations from the current vendor. The Department is only appropriated enough funds to operate the MES core and modular solutions and this request would pay for the cost to transition to new vendors if a new vendor is selected through the procurement process. Without dedicated transition funding, the Department would be unable to transition in a timely manner, which would not be in compliance with CMS and state procurement requirements. Not complying with CMS regulations puts the Department at risk of losing federal financial participation (FFP) and the Department would be at risk of having to pay back CMS for any federal funding received while being out of compliance.

Business Process Analysis

Under the federal modularity rule CMS requires states to follow a modular approach that supports timely, cost-effective projects. The broadened definition was also refined to support an enterprise approach where individual modules and services are interoperable and work together seamlessly to support a unified Medicaid Enterprise. CMS has established the expectation that a modular approach provides the most efficient and cost-effective long-term solution for meeting states' business needs. This funding request is not addressing an operational problem, it is to remain compliant with state and federal regulations.

Cost-Benefit Analysis and Project Alternatives

In 2020, the Department completed an internal and external environmental scan and an alternatives analysis with current staff and other states to identify potential models, new approaches and strategies for the procurement of the Colorado MES ecosystem. The environmental scan included interviews with other states to understand their models within their existing and conceptual MES. The Department interviewed subject matter experts (SMEs)

internally as well as in other states to understand the challenges, strategies and models that can be addressed through the future Colorado MES ecosystem. The environmental scan and alternatives analysis were used to guide the modular procurement approach, which has received approval from CMS. Without this funding, the Department would be unable to complete the transition activities within the required timeframes which would put the Department out of compliance with CMS and state procurement requirements. Per 45 CFR 95.635, if the Department fails to comply with the requirements, payment of FFP to Colorado's Medicaid and CHIP programs can be disallowed.

Success Criteria and Improved Performance Outcomes

All MES projects that receive enhanced FFP through CMS require outcome-based measures. These measures will be reviewed and approved by CMS prior to the start date of this project. CMS requires the Department to continue to meet the approved outcomes and metrics on an ongoing basis to continue to receive enhanced funding.

Assumptions for Calculations

- Transition cost estimates were derived from other state contracts and vendor estimates.
- The Department assumed that 85% of the current maintenance and operations budget would be required to transition the core MMIS. Currently, no other state has been through a takeover of their MMIS.¹
- BIDM and PBMS estimates were based on estimates from vendors for their core solutions.
- The Department assumes that these funds would only be needed if a new vendor takes over any of the core or modular solutions and would use the FY 2024-25 budget cycle to true up any changes with new cost estimate information.
- The Department included a 5% contingency buffer to the total estimate for FY 2023-24 and FY 2024-25 per the template instructions.
- The Department assumes it would take two fiscal years to transition all MES core and modular solutions from one vendor to another. The two-year timeline is a CMS best practice as well as a lesson learned during the COMMIT project implementation.
- Detailed timeline assumptions for each core and modular solution are provided in the table below, but subject to change due to unforeseen contingencies.
- The Department assumes it would need dedicated, Medicaid experienced, contractor resources to assist with transition management if a new vendor or module is selected. The Department assumes that it will need a dedicated project management resource for MMIS and BIDM in FY 2023-24 and FY 2024-25 and for PBMS in FY 2023-24 until the transition from the current vendor to the new vendor is complete.
- The Department used a weighted average to calculate the federal financial participation (FFP). The Department allocates costs across both Medicaid and Children's Health Insurance Program (CHIP) based on the caseload recorded on June 30th of the prior year. The pre-pandemic allocation was 94% of the population in Medicaid and 6% in CHIP.
- The Department assumes that it would receive a 90% FFP on all transition costs including systems and contractor support related to the Medicaid allocation and 65% FFP for costs related to the CHIP allocation. As a result, the weighted average FFP is 88.50%.

¹ The vendor that manages the MMIS changes, but the claims system itself does not.

- o The Department assumes it will have all Advanced Planning Documents (APD) submitted and approved by CMS prior to incurring any expenditure, allowing the Department to receive the enhanced weighted FFP on all transition costs.

Consequences if not Funded

Without funding, the Department would have inadequate resources to transition all of the core and modular solutions to new module vendors, which would put the Department out of compliance with CMS and state procurement requirements. As mentioned above, per 45 CFR 95.635, if the Department fails to comply with CMS requirements, payment of FFP may be disallowed.

Change Management

Change Management is a requirement for all Department projects. The Department has a robust internal change management process and requires all vendors to deliver a change management plan, which includes: the approach to change management, a scope control process, process to monitor and measure scope, testing strategy, training plan, and operational readiness plans.

The Department follows CMS MES testing guidance framework, which outlines actions and deliverables states are required to demonstrate or provide as evidence. These include:

- o Contract requirements for system testing
- o Definition of defect severity
- o Defect resolution
- o Master test plans
- o Test execution; including units, system integration, regression, user acceptance, performance and load testing, parallel and data migration testing
- o Incident response handling
- o Requirement's traceability
- o Deployment plan
- o On-going testing after production to validate any system changes

Alignment with OIT Best Practices and Standards

The Department collaborates with the Office of Information Technology (OIT) to ensure that all MES systems and vendors are in compliance with OIT's best practices and standards.

Procurement

The Department is the single state agency for the Medicaid program and is wholly responsible for ensuring that its programs and systems meet federal requirements.² As a result, OIT staff are members of the MES evaluation team involved with the procurement of these systems.

Disaster Recovery and Business Continuity

All implementations would be compliant with all existing state and federal IT architecture, security and business continuity requirements and guidelines, and state cybersecurity policies set forth by the Office of Information Security. Additionally, all OIT project gating would be closely followed to ensure adequate risk assessments are conducted and all necessary actions

² 42 CFR § 431.10 (a)

are taken as a result. The Disaster Recovery Plan is a requirement of gate 4 and the authorization to operate would not be granted without the required documentation and planning.

Accessibility Compliance

The Department, in collaboration with OIT, is in the process of developing an accessibility compliance program for current and future vendors.

ADDITIONAL REQUEST INFORMATION	
Please indicate if three-year roll forward spending authority is required.	X Yes <input type="checkbox"/> No
Is this a continuation of a project appropriated in a prior year?	<input type="checkbox"/> Yes X No
If this is a continuation project, what is the State Controller Project Number?	N/A
If this request effects another organization, please provide a comfort letter.	N/A
Please attach a letter from OIT indicating review and approval of this project	N/A

ESTIMATED PROJECT TIMETABLE		
Steps to be completed	Start Date	Completion Date
Core MMIS	September 2023	June 2025
EDI Module	September 2023	June 2025
Provider Call Center	September 2023	June 2025
TPL Module	September 2023	June 2025
CCM DDI	August 2023	June 2025
Claims Editing Solution	September 2023	June 2025
Electronic Visit Verification	September 2023	June 2025
CMS Interoperability and Patient Access	September 2023	June 2025
Enterprise Data Warehouse Transition	March 2023	June 2025
Provider Performance and Quality Management	March 2023	June 2025
Recovery Tracking	March 2023	June 2025
Program Integrity	March 2023	June 2025
Core PBMS	July 2023	October 2024
Rebate Admin	July 2023	October 2024
PDL Purchasing	July 2023	October 2024
RTBI	July 2023	October 2024
Opioid Risk Metric Tool	July 2023	October 2024



COLORADO

Department of Corrections

Jared Polis
Governor

Dean Williams
Executive Director

FY 2023-24 Request Year-IT Capital Request | November 1, 2022

Signature

FY 2023-24— Department of Corrections IT Capital Construction Project: CC-IT-01 DeCORuM

Summary of Request	Total Funds	CCF-IT	Cash Funds	Reappropriated Funds	Federal Funds
FY 2023-24	\$9,873,308	\$9,873,308	\$	\$	\$
FY 2024-25	\$	\$	\$	\$	\$
FY 2025-26	\$	\$	\$	\$	\$

Categories of IT Capital Projects

System Replacement (costs escalating, failing technology, software or vendor support ended, or new technology, e.g., DRIVES, CHATS)	System Enhancement Regulatory Compliance (new functionality, improved process or functionality, new demand from citizens, regulatory compliance, e.g, CBMS)	Tangible Savings Process Improvement (conscious effort to reduce or avoid costs, improve efficiency, e.g., LEAN, back office automation)	Citizen Demand “The Ways Things Are” (transformative nature of technology, meet the citizens where they are, e.g., pay online, mobile access)
---	---	--	--

Request Summary:

The Department of Corrections (DOC) requests \$9,873,308 additional Information Technology (IT) Capital Construction (CCF-IT) General Fund (GF) funding for the Department of Corrections Offender Records Management System (DeCORuM) project through FY 2025-26. The request will fund the additional resources required to complete the project. This is a continued **System Replacement Project**. If not approved, DOC will continue to utilize an unsustainable system that is a decade past its projected end-of-life, risking catastrophic failure.

The Department will leverage commercial off-the-shelf (COTS) software to implement a fully integrated electronic offender management information system (eOMIS). This software solution will eliminate the need to use the multiple outdated software systems that span 30 plus years of aged technology.

- All requested expenditures are outside the scope of the project as the project timelines were directly impacted by the COVID Pandemic.
- The stakeholders for this project include DOC Executive Leadership and staff, Parole and Parole Board, OIT technical teams that support the backbone of the network, network appliances, servers, DCIS, PCDCIS Databases, the inmate community, and the software vendor, Marquis. Per the Governor's WIG, these teams work in an Agile workspace with a focus on change management and are influential to the project.

Project Description:

This comprehensive system will replace the Department's current legacy system, the Department of Corrections Information System (DCIS), with a fully-integrated system that encompasses inmate information management and tracking, an electronic health records (EHR) system, and a platform to manage inmates who are under supervision in community corrections or on parole. This fully integrated system will significantly enhance information sharing and cross-program case management as inmates are prepared to reintegrate into society while within facilities and on parole. The inclusion of the Parole Board application is key to the complete integrated system. Implementation of a fully-integrated inmate management system spanning from admissions to discharge from parole is an integral part of the long-term strategy to enhance the overall efforts of the Department to prepare each inmate to be a law-abiding citizen upon discharging from the custody of the Department.

The capital construction funding received in FY 2014-15 for Phase I of the project financed requirements gathering, in addition to the development and release of a request for proposal (RFP). The RFP was awarded and a contract was signed on July 15, 2015 for the implementation of an Electronic Health Records system and database setup. The funding received for FY 2015-16 for Phase II was for DCIS replacement which is critical to DOC's operations, serving as the "backbone" of prison operations, inmate movement, program monitoring, and all aspects of inmate management. Most of the current system was written over 24 years ago with technology that is obsolete and difficult to maintain. It comprises over 1,100 individual programs containing 2.7 million lines of code. This request is a continuation of the effort of the Phase III funding for integration of the Division of Adult Parole and the Parole Board standalone systems. That funding request intended to modify the COTS system by updating the modules to meet the need of DOC's business rules and processes to create a complete and fully integrated inmate information management system. The following critical modules planned enhancements in Phase III: EHR, Inmate Orders, Street Gangs, Contact with Parolees, Goods and Services, Inmate Mail, Food Services, Laundry, Victim Services, Law Library, Public Reading Material, Inmate Banking, Incident Tracking, Vocational Training, Visiting, Volunteers, and Education Programs. Many of these programs are required by Colorado Revised Statutes and legal precedent.

Background of Problem or Opportunity:

DOC is utilizing COTS software to implement a fully integrated electronic offender management information system (eOMIS). This software solution will eliminate the need to use the multiple outdated software systems that span 30 plus years of aged technology. These aged systems are not only very costly to maintain but also present huge concerns with current security requirements as defined by the Governor's Office of Information Technology (OIT) and

the State of Colorado Chief Information Security Officer (CISO). The system will also provide a secure single software solution to replace all of the applications listed above, as well as provide a single source for data entry. This will make the data more secure as well as providing a single source of truth that the Department can use for other Legislative and legal uses.

Efforts to complete this project also support both the Department and Governor WIG's making the State of Colorado both a safe and preferred workplace and employer, by having one software platform that is easy to use. Completing this project also supports Federal and State laws surrounding prison reform as the data is not reliant on multiple systems and therefore is more consistent in tracking an inmate from the moment they are turned over to the Department until the moment they are released from the system and beyond. Finally, having an application that can more consistently track inmates and their progress through specific treatment programs helps fulfill Executive Director William's WIG of reducing recidivism.

Justification:

In early 2012, IBM was contracted by OIT to develop the "Operational Risk Assessment" of 133 State information technology systems. As part of this assessment, IBM identified the 10 systems that pose the greatest risk to the State, of which DCIS is one. DCIS poses a significant risk to the state due to its age, size, limited availability of IT staff able to maintain its antiquated technology, limited availability of resources in the marketplace, and lack of an existing plan for modernization. DCIS is critical to DOC's operations, serving as the "backbone" of prison operations, inmate movement, program monitoring, and all aspects of inmate management. As stated, the system is obsolete, difficult to maintain, and lacks modern functionality. For example, DCIS was not developed for tracking and trend analysis, and only current inmate data is available in many areas. This makes it virtually impossible to track an inmate's needs and progress through the system over time, even though the historical data is stored in the database. Therefore, DCIS provides almost no reports to staff to help manage programs, services, and key operations. Modern data systems, however, offer extensive reporting capabilities.

Adding to the current challenge is the limited pool of programmers with the knowledge to work on DCIS and the premium rate they charge if available. Also, the Department's last DCIS Informix-4GL programmer is expected to retire in four years. Finally, the Department is at further risk due to the inability to obtain additional staff who are conversant in the Informix-4GL [and Informix database management system (DBMS)] technology used to build the system.

Another program used by the Department is the Offender Release of Information Law Enforcement (ORILE) system, which serves as a portal for county jails to login and access inmate information, including health records involving diagnoses, medications, and immunizations. However, this is a "one way" exchange, meaning the system is designed to transmit, but not receive data.

The Department's need for improved inmate information management also pertains to information utilized post-incarceration. Currently, DOC utilizes Colorado Web-based Integrated Support Environment (C-WISE) for parole information management. C-WISE provides 24-hour assistance to DOC, contract providers, law enforcement, inmates, and the public. It centralizes

data for DOC by allowing parole officers to dictate case contacts, leave messages, and request warrants 24/7. Officers can access the C-WISE system by phone, web-enabled computer, or personal digital assistant (PDA) device. All information received by C-WISE is recorded and transcribed into an electronic chronological history of each inmate. Some of the data maintained in C-WISE includes information about fingerprint hits, inmate check-ins and contacts, inmate, public, police, and provider calls, inmate changes of address and employment, treatment referrals, drug test results, and violations.

Although the C-WISE system satisfies many of the needs of parole and community services, DCIS is still used for maintaining some post-incarceration data on inmates, such as details on parole plans and parole hearings. As the Department is replacing DCIS, it is necessary to replace C-WISE with an integrated system capable of housing all necessary data on inmates under the management of parole and community services.

The Colorado State Board of Parole (Parole Board) is an independent agency comprised of seven members appointed by the Governor and confirmed by the Colorado State Senate. The Parole Board conducts parole application and revocation hearings in accordance with state statutes and internal policy, utilizing a standalone electronic system for the hearing process for all application hearings. This system enables real-time transmission of release decisions to Time and Release Operations, facility case managers, and other stakeholders. Several other critical activities are conducted through this standalone system.

Therefore, the Department requires an integrated system that covers an inmate from admission to discharge from parole. This integrated approach will enable significant enhancements in the Department's ability to address the criminogenic factors before inmates are released as well as while they are on parole, which supports WIG #1, "Reduce Recidivism." The information available to a parole officer as they help an inmate transition back into the community, develop a targeted treatment plan, and provide appropriate tools, would be significantly better than what is offered by present technology.

- **Business Process Analysis** - DCIS was identified in a 2012 IBM study as 1 of 10 state systems posing the greatest operational risk due to its age, size, small pool of IT staff able to maintain its antiquated technology (Informix-4GL programming and Informix DBMS), and limited availability of resources in the marketplace. DCIS serves as the "backbone" of prison operations, program monitoring, and all aspects of inmate management, but is based on programming technology that is nearly 30 years old that is obsolete and difficult to maintain. The operational issues of current multiple systems migrated into a fully integrated inmate management system will benefit the department, the inmate, and ultimately the public.
- **Cost-Benefit Analysis and Project Alternatives (per H.B. 15-1266)** - The cost benefit to completing this project are intensified by "doing nothing". Doing nothing would leave the DOC with a system facing catastrophic failure as it is a decade past the projected end of life. Also, the security risks associated with continued use of the old systems leaves the DOC and the State of Colorado out of State and Federal IT Security protocols, standards and laws.

- **Success Criteria and Improved Performance Outcomes** - By completing this project the Department will be able to eliminate the old systems, make work life balance better for all employees and allow us to better serve and support the people ordered to the Department's care.
- **Assumptions for Calculations** - The outlined costs include a 3% projected annual salary increase for all resources as approved by the Colorado State Legislative Body.

The focus to complete this \$30 million project is multifaceted and will provide a solution to the following:

- bring current all DOC applications related to Offender Management;
- bring the DOC up to date with current IT security standards and laws (both State and Federal);
- data stability and accuracy standards and laws;
- fulfilling State and Department WIG's to provide a safe and secure environment for staff as well as the inmate population; and
- converted and validated data will become the backbone of DOC data for use with other current and future projects.

Summary of Funding Request for FY 2023-24			
		Incremental Change	
	FY 2024 -25 Request	FY 2025-26 Request	FY 2026-27 Request
Total Funds	\$9,873,308	\$0.0	\$0.0
Staffing	\$9,330,539	\$0.0	\$0.0
VBlock Maintenance Renewal	\$264,000	\$0.0	\$0.0
Oracle Licenses	\$278,769	\$0.0	\$0.0

- **Consequences if not Funded** - The Department would continue to operate using its current systems and protocols. However, doing so would put the Department at risk of not being able to satisfy its fiduciary responsibility to Colorado citizens, communities, victims, and inmates as well as local, state, and federal governments, to be able to account for all inmate information, tracking, reporting, planning based on offense(s), policy, and statute. DOC and OIT have agreed that DCIS puts the State at significant risk due to its age and lack of available resources to maintain it, based on the following shortcomings of operating the system:
 - If continued funding isn't received, the DCIS, PCDCIS, and CTAP programs will not be integrated with DeCORuM.
 - Offender management post-incarceration in parole and community setting would also be negatively impacted if this request were not funded.
 - C-WISE source code and data tables are not in DOC's database, meaning that it cannot run on any other technology systems other than that for which it was designed.

- Most modules from the COTS system will not be enhanced to fit the needs of the Department, such as Inmate Orders, Street Gangs, Contact with Parolees, Goods and Services, Inmate Mail, Food Services, Laundry, Victim Services, Law Library, Public Reading Material, Inmate Banking, Incident Tracking, Vocational Training, Visiting, Volunteers, Grievance Tracking, and Education Programs.
- **Change Management -**
 - o Training includes: (1) business process training due to changes as a result of the technology; (2) system training; and (3) technical training for resources supporting the system. Training media includes instructor-led classes, videos, on-demand computer-based training, and online help.
 - o Testing types include: (1) user-acceptance testing; (2) unit testing; (3) system integration testing; (4) performance testing; (5) data migration testing; and (6) automated regression testing.
 - o The Change Management Plan also includes providing demonstrations of new modules of the software for not only users but also for all leadership levels; coaching on the Agile process; and coaching on Servant Leadership.
- **Alignment with OIT Best Practices and Standards -**
 - A. Governance
 1. Comply with Colorado House Bill (HB) 12-1288, which was enacted by the General Assembly of the State of Colorado to create long-term sustainability and eventual retirement of information technology (IT) systems when initiating a major information technology project. Among other things, this bill defines specific minimum requirements for IT Project Plans as well as the responsibility of the Governor's Office of Information Technology (OIT) to establish and implement criteria and enhanced governance that will contribute to project success. HB 12-1288 requires all Major Projects, as defined by the OIT Project Scaling and Risk Assessment, to meet certain requirements. These include:
 - a. Project Manager;
 - b. Comprehensive Risk Assessment Plan;
 - c. Documented project policies and procedures;
 - d. Documented business case;
 - e. Documented business requirements;
 - f. Documented information security plan;
 - g. Documented Disaster Recovery Plan; and
 - h. Funding strategy for maintenance and support.
 2. Use Enterprise Portfolio and Project Management Office (ePMO) established processes.
 - a. Follow an established gating process. This program will be governed by the OIT Executive Governance Gated Process.
 - b. Follow an established Change Management Process.
 - B. Apply Information Technology Infrastructure Library (ITIL) Framework. The ITIL Framework is a system of globally recognized best practices for IT service

management. This program encompasses the first three stages of the IT services lifecycle.

1. Service Strategy

- a. Define high level business requirements. This program is nested within the Governor's IT modernization roadmap and better serves DOC's business needs.
- b. Defining utility (fitness for purpose) and warranty (fitness for use) requirements will focus the delivery of business value for the Offender Management System (OMS) users.
- c. Defining operational management processes for the transitioned services and retirement of legacy services / systems will ensure continuity of operations.

2. Service Design

- a. Documenting "As Is" processes by OIT/DOC subject matter experts (SMEs) will characterize the essential DOC business functions (use cases) and processes currently supported through DCIS and its legacy user interfaces.
- b. Defining the "To Be" DOC web-based enterprise will be an output of the OIT/DOC government team analyzing and prioritizing the functional requirements for the next-generation replacement for DCIS.
- c. A Request for Proposal (RFP) for developing the "To Be" DOC web-based enterprise will elicit commercial vendor bids to meet the DOC functional requirements.
- d. The contract will be awarded to the vendor based on best value criteria. The contract team will co-locate with the OIT/DOC SMEs to ensure DOC requirements are fully met within the next-generation enterprise.

3. Service Transition

- a. System-level verification will rigorously test the interactions among databases and services until all technical utility performance success criteria are satisfied.
- b. User-level validation by a group of DOC stakeholders will employ the system by executing scenarios that characterize routine use cases to assess warranty. Any discovered shortfalls must be assessed for mission impact. IV&V will certify the baseline v1.0 system for implementation.
- c. Implementation of the "To Be" system will include training for DOC users and OIT support staff. During the cut-over period, users will employ the new system and services for operations; the legacy system and services will continue to run in parallel to ensure no service interruption.
- d. Legacy system retirement will occur at the end of the cut-over period when all operational utility and warranty criteria are met and the new system is formally accepted by DOC.

C. Information Technology Security and Risk Management

1. OIT will follow the first five of the top twenty critical IT security controls of the National Institute of Standards and Technology (NIST). They are as follows:
 - a. Inventory of Authorized and Unauthorized Device;
 - b. Inventory of Authorized and Unauthorized Software;
 - c. Secure Configurations for Hardware and Software on Mobile Devices, Laptops, Workstations, and Servers;
 - d. Continuous Vulnerability Assessment & Remediation;
 - e. Malware Defenses.
2. OIT will establish and follow a data encryption plan for critical and sensitive data (e.g. Health Insurance Portability and Accountability Act of 1996 (HIPAA), Personally Identifiable Information (PII), etc.)
 - a. Data Encryption is the process of encoding information in such a way that only authorized parties can read it. OIT will be encrypting DOC data in such a way as to protect the information of inmates. With the new OMS allowing for access through the firewall, information such as DOC Inmate ID, birthday, offense, victim information, etc. may need to be encrypted.
3. Per OIT policy, an OIT Security Analyst is assigned to the project.
4. Per OIT policy, a Risk Management framework will be followed.

D. Architecture

1. OIT will establish and follow a modern and sustainable DBMS.
2. OIT will establish and maintain modern and sustainable applications.
 - a. Electronic health record (EHR) application
 - (1) An EHR is an electronic version of a patient's medical history that is maintained by the provider over time, and may include all of the key administrative clinical data relevant to that person's care under a particular provider. The EHR automates access to information and has the potential to streamline the clinician's workflow. The EHR will reduce the incidence of medical error by improving the accuracy and clarity of medical records and reduce the duplication of medical information.
 - b. OMS application
 - (1) The OMS is a computerized case file management system used by the Department of Corrections, the Parole Board, and other criminal justice partners to manage all information on state inmates throughout their sentences.
 - c. Parole application (C-WISE) will be replaced for parole information management.
 - d. DOC, partners, and local law enforcement agencies, county jails, etc. will facilitate information sharing with external constituents and will support a mobile workforce to allow for information access anywhere and anytime.

- **Disaster Recovery and Business Continuity** - The DOC protects data by ensuring all critical systems are redundant. If the primary hardware fails, administrators need to be able to failover to a secondary hardware system allowing minimum downtime. In order to continue to provide the maximum uptime critical systems, there are redundant systems on site with asynchronous data transfer to an offsite disaster recovery site and system. For security assurance an updated firewall appliance and a failover system have been purchased. To support those appliances, an FTE is required for the security and administration of those firewall appliances during the implementation of the entire system.
- **Accessibility Compliance** - Statutory requirements regarding non-visual access per Section 24-85-103, C.R.S., are strictly followed and this software system complies with all requirements.

ADDITIONAL REQUEST INFORMATION				
Please indicate if three-year roll forward spending authority is required.	x	Yes	<input type="checkbox"/>	No
Is this a continuation of a project appropriated in a prior year?	x	Yes	<input type="checkbox"/>	No
If this is a continuation project, what is the State Controller Project Number?	PROJ007398			
If this request effects another organization, please provide a comfort letter.	n/a			
Please attach a letter from OIT indicating review and approval of this project	Attached			
CONTINUATION HISTORY (DELETE IF NOT APPLICABLE)				
	FY 2014-15 Appropriated	FY 2015-16 Appropriated	FY 2017-18 Appropriated	Total Appropriations
Total Funds	\$5,796,000	\$11,049,761	\$12,610,083	\$29,455,844
Capital Construction Funds	\$5,796,000	\$11,049,761	\$12,610,083	\$29,455,844
Cash Funds				
Reappropriated Funds				
Federal Funds				
	Through FY 2022			Total
Amount Spent	\$27,584,726			\$27,584,726
Amount Encumbered	\$5,614,023			
Total Funds Available				

ESTIMATED PROJECT TIME TABLE		
Steps to be completed	Start Date	Completion Date
FYI 2023 Training, Inmate Movements, Parole	06/2022	06/2023
Banking, Store, Grievance Tracking, Visitation	06/2023	06/2024
Housing, PREA, Threat Group	06/2024	06/2025
Enhancements	06/2025	06/2026



Department Priority: CC IT-01
Request Detail: OCFMH Information Management Systems and Data Reporting

Summary of Funding Change for FY 2023-24			
		Incremental Change	
	FY 2022-23 Appropriation	FY 2023-24 Request	FY 2024-25 Request
Total Funds	\$0	\$5,946,390	\$0
FTE	0.0	0.0	0.0
General Fund	\$0	\$5,946,390	\$0

Summary of Request

The Department of Human Services (DHS, Department), Office of Civil and Forensic Mental Health (OCFMH) requests \$5,946,390 total funds/General Fund for the purchase, development, and enhancement of OBH data and information systems. Funding will be needed over a three fiscal year period to implement a strategic, comprehensive approach to enhancing current systems and building new systems, which will be integrated into existing systems as applicable. This capital request is for multiple sub-projects which will be more effective if they can be developed as part of a coherent strategic plan. This project would support critical business functionality for the Forensic Services Division (FSDV), the Colorado Mental Health Institute at Pueblo (CMHIP), and the Colorado Mental Health Institute at Fort Logan (CMHIFL).

Current Program

The Department's Office of Civil and Forensic Mental Health (OCFMH) operates two mental health institutes (MHIs), or state-run psychiatric hospitals: the Colorado Mental Health Institute Pueblo (CMHIP) and the Colorado Mental Health Institute Fort Logan (CMHIFL) in Denver. OBH also includes the Forensic Services Division (FSDV), which was created in June 2017 to serve individuals who have been court ordered to the Department for competency evaluations, competency restoration services, and community-based supervision.

The MHIs and FSDV collect highly sensitive information, including data related to criminal proceedings and personal health information (PHI) that is subject to the privacy provisions of the Health Insurance Portability and Accountability Act (HIPAA). This information is collected and stored in various disconnected systems, which has resulted in problems with communication gaps affecting patient care, compliance with legal and treatment

requirements, and data reporting. Additionally, without an adequate database (or in the case of FSDV, without any database at all), staff are spending extensive time manually entering, retrieving, and validating data.

Role of the Consent Decree

The Department was sued in 2011 for failure to provide timely competency evaluations and restoration treatment to pretrial detainees in violation of the defendants' constitutional rights. The Department has been subject to requirements resulting from the lawsuit since then and is currently under court oversight of a 2019 consent decree.

One of the recommendations from the consent decree was to improve the data infrastructure for OBH. In response, SB 19-223 provided funding for the initial build for the MHI's "Data Warehouse," which was built for data and reports related to the consent decree.

MHIs and the Data Warehouse

The Data Warehouse is a custom, centralized database built to contain certain patient level information from otherwise disconnected sources: the Electronic Health Record (EHR) and from other supporting ancillary systems (Ancillary Web and Legacy Cube) that contain legal and other patient-level information. The Data Warehouse combines certain data from these various sources to facilitate reporting and analysis that requires a combination of medical, legal, and other ancillary information. The Data Warehouse was built specifically to address data mandated to be reported as part of the consent decree; it does not integrate all relevant data. Examples of data not crossing from the EHR to the Data Warehouse include:

- Diagnosis, including certain conditions that impact potential for restoration such as intellectual and developmental disabilities;
- Race and ethnicity;
- Medications prescribed and administered; and
- Circumstances surrounding medications, such as whether medications were administered due to an emergency or whether medications were court-ordered.

The above data elements are relevant to teams within the FSDV to assist with transition planning or to ensure the individuals do not regress when they are returned to jail once restored to competency or moved to a lower level of care. At present the staff must manually locate this information for each patient in the EHR and cannot access aggregate information when several individuals are transferred.

In previous years, OBH has used Microsoft (MS) Access to build custom databases and reports integrating these types of data. However, MS Access does not meet the security needs of the sensitive data stored, and the system is outdated and not eligible for needed enhancements (see "Problem" section below).

The Data Warehouse is used by the staff who oversee services for clients that are tracked for the consent decree, which includes clients in both the MHIs and with FSDV. The Data Warehouse aggregates data and produces reports for data visualization. It does not have

functionality to serve as an operational tool for the everyday use of MHI or FSDV staff in their work with clients.

Forensic Services Division (FSDV)

The Forensic Services Division is responsible for coordinating, managing, and complying with court orders for forensic evaluations and related forensic services statewide. FSDV coordinates data and documents with internal and external sources including providers, District Attorney offices, and court systems.

Currently, the FSDV exchanges records via email and stores records on multiple shared drive locations; there is no centralized application or database that all Forensic Services teams reference, update, or use for reporting. This reduces data accuracy and creates duplicate data in multiple systems. As a result, FSDV staff currently spend a significant amount of time manually entering, retrieving, validating, and analyzing data.

Problem or Opportunity

Currently OCFMH has insufficient data tools and often relies on time-intensive manual processes to fill the gaps and meet the critical business needs. The current systems are outdated, and modernization efforts already underway do not address the need for new operability. The manual processes and disparate systems are inadequate for developing program strategies, providing data for federal and state reporting requirements, or for meeting daily operational needs for serving clients.

Updates to the Data Warehouse and Phasing Out MS Access

The Data Warehouse needs to be updated to include new data points, which will be used by the MHIs, FSDV, and OBH leadership to forecast staffing, identify treatment protocols, and identify areas for improvement. This work can no longer be done using MS Access, as this system is being phased out and does not meet security needs. OBH is actively working on the App Modernization project, which will eliminate use of MS Access databases. However, the staffing for the project is currently ad hoc, the timeline is prohibitively slow, and the time spent focusing on these efforts does not allow for new data needs to be met. Funding is necessary to meet current priorities, to prioritize new builds, and to integrate the systems as they are built. The Division is looking for a more comprehensive and sustainable approach to solving its data problems.

Mental Health Institutes

The MHIs have identified several data and reporting needs to be researched, developed, purchased, or enhanced for the clinical and administrative staff. These needs are outlined in the table below. These will also all need staff support during the capital development and ongoing operational staff time for routine maintenance, support, and enhancements to allow program staff the ability to focus on client-facing work. The staffing support needs are outlined in the request OCFMH *Information Management Systems* which is submitted separately.

Table 1: System Needs, Status, and Solutions

Function	System Name (if any)	Current Status & Need	Proposed Solution
Critical Incident Reporting System	RL-Datix	OBH does not have an adequate critical incident reporting system. The RL-Datix system has been selected and is in the contracting phase for remote hosted Incident Management.	This system will allow critical incidents to be reported and securely added to the Data Warehouse. Corresponds with Row 1 of Table 2
Patient Electronic Health Record	BEHR Clinical Modules, including Cerner Discern Reporting	OBH has an electronic health record (EHR) system, but users of the patient EHR have requested additional functionality above our current implementation. Furthermore, there are regulations that are passed that require additional functionality.	There are modules that we have not purchased within our Cerner contract that are necessary for patient care, such as “Population Management” which will assist our clinicians with patient care and administrative reporting. Some modules are newly added to BEHR while others were premium options not selected in the original contract. Corresponds with Row 22 of Table 2
Performance Dashboard	Excel/ Tableau	The MHIs’ administration and quality management staff need dashboards on a variety of metrics to inform program strategy. Currently, metrics are tabulated manually by a consulting firm using Excel.	OBH will investigate automated options to integrate information into a dashboard. This will replace or minimize manual processes. Corresponds with Row 5 of Table 2
Observation tracking for Safety/Regulatory Compliance	The Joint Commission Tracers with AMP, Qualtrics, Red Cap etc	Safety and regulatory compliance requires that MHIs track data elements related to observation and reports. Currently, staff must complete several manual processes, reviews of disconnected data systems, and compile these to meet this requirement.	OBH will investigate available software tools to purchase. Incident management may be used for some. Other options need further research. These tools will require integration with the patient EHR and/or other systems. Corresponds with Row 5 of Table 2

Research data collection, staff feedback, survey tracking, post-discharge surveys	RedCap, Qualtrics, Survey Monkey	MHIs have data collection, analysis, and reporting needs for daily operations. Currently there is not a mechanism in place for research data collection, including staff surveys and post-discharge surveys.	OBH will investigate current tools to determine if they can be enhanced to meet the needs or if additional software needs to be purchased. Corresponds with Rows 3, 5, 10, 21 of Table 2
Staff skill competency tracking/ Integrated online learning	TBD	Regulations require that staff competency be tracked.	The proposed solution is to investigate if Cornerstone can be enhanced to track this information or if there is software that can be purchased to address this need. Corresponds with Rows 14, 15, 17, 19 of Table 2
Physician performance & staff credentialing tracking	TBD	Regulations require OBH to track staff credentialing, focused professional practice evaluations, and ongoing professional practice evaluations. This is currently done manually.	OBH will purchase software to address this need or enhance existing systems. Corresponds with Rows 14, 15m 17, 19 of Table 2
Operational analysis dashboards and combining data	Power BI/Tableau	The current data warehouse is focused on data required for the consent decree. There is a need to determine if there should be additional data points to be added to it or another solution for operational analysis and dashboards.	Data collection will need to be integrated into current systems (BEHR, Legacy Cube or there may be a need for new development. Power BI is a Microsoft tool that can be used with various data sources. Alternatively, OBH may enter information into Data Warehouse or directly into Tableau. OBH will investigate and build/purchase what is needed. Corresponds with Rows 5, 21 of Table 2
Risk management/ reserves/ Litigation tracking	TBD	Currently, these items are tracked manually.	OBH will explore purchasing software to track this data. Corresponds with Rows 14, 15m 17, 19 of Table 2
Asset tracking	TBD	Currently MHI assets are	The proposed solution is to

		either tracked manually.	investigate if CDHS has a tool that would track assets or if a system should be purchased. Certain classification of assets may result in needing multiple systems. ServiceNow may be a potential solution for some of the assets. Corresponds with Rows 14, 15m 17, 19 of Table 2
Pharmacy tracking systems	TBD	Currently pharmacy inventory is tracked manually.	OBH will explore options and purchase a central supply and inventory system. Corresponds with Rows 14, 15m 17, 19 of Table 2
Employee health data	TBD	OBH uses RedCap for immunizations; this needs enhancements. Currently Employee health data is collected on paper with the exception of Immunizations. Some of this data is reportable to regulatory agencies.	OBH will enhance RedCap and investigate if there is a software solution for other employee health data. Corresponds with Rows 2, 3 of Table 2
Financial Applications/ databases for position tracking	TBD	There are three databases as part of the MS Access modernization that include financial information and position tracking. The scope of modernization is limited to current functionality and limited new priorities, but there are additional enhancements needed to maximize these systems.	OBH will enhance the functionality of these modernized systems. Corresponds with Rows 14, 15m 17, 19 of Table 2

Forensics Services Division

Many of the process changes that the Forensic Services Division has implemented have been driven by the State's efforts to comply with the 2019 federal consent decree, which requires the Department to provide pretrial defendants timely evaluations and competency restoration services. In response to updated requirements and timelines, each team within the Forensic Services Division has developed isolated solutions that meet certain needs of the team but are not integrated with one another nor with external partners.

Through a consultant, the FSDV conducted a discovery and assessment needs analysis in May 2021 to identify the challenges and potential solutions. The analysis reflects that FSDV staff spend significant amounts of time entering, retrieving, and validating data elements. For example:

- Each member of the Forensic Services Team estimates that they spend one hour per day going through spreadsheets manually seeking out updated court orders for their clients. This administration effort is equivalent to 2.5 FTE per year. Centralizing the data and allowing the team to view a dashboard of changes would reduce administrative time manually searching for new court orders and increase team capacity for conducting client support activities.
- The Outpatient Restoration Team coordinators spend a combined eighty hours during the first week of each month manually tracking the receipt of monthly provider assessment reports and submitting them to the courts. Enhancing the system will save time by enabling automatic notifications and file uploading for legal records.
- Functionality supporting the provider assessment reports would save 0.5 FTE per year and increase the team's capacity to provide programmatic technical assistance and support to the providers.
- The Court Services team spends more than thirteen (13) hours per week on manually intensive and redundant data entry, including ten hours logging collateral information requests, three hours entering report due dates, and more time ensuring there are no blank fields on the report. With the proposed functionality, data validation would prevent blank fields in the data, or error reports could be generated automatically for blank fields, reducing the number of pages required for review from 700 to 100.

Aggregating and centralizing data and documents currently stored in disparate systems and locations with add-on dashboards, notifications, and enhanced reporting functionality would address many of the administrative inefficiencies, which, ultimately, would shift focus where it belongs onto activities that directly benefit clients.

Summary

OBH is currently operating with a constellation of outdated systems and applications to meet various data needs. In many cases, particularly for the FSDV, there are no standard systems or applications at all, and staff are manually tracking client data and individually problem-solving to manage the data necessary for their clients. The Data Warehouse created a foundation for a better system, but it needs major enhancements to meet existing and evolving needs. Addressing each of these problems on an ad-hoc basis would perpetuate duplication, system incompatibility or overlap, and data security and integrity problems. Instead, OBH needs a comprehensive, strategic approach to solving its data needs. OBH has varying levels of detail for the specific needs and solutions needed: there is greater detail for the needs of the Forensic Services Division because OBH engaged Steadman for the full gap analysis (linked above). The data for the MHIs is from surveys, Greeley Consulting observations, and requests that OBH's Information management team has been unable to fulfill. This request would support a cohesive approach to addressing the data management needs across the whole office.

Proposed Solution and Anticipated Outcomes

The Department requests funds to create a strategic, comprehensive approach to enhancing current systems and building new systems, which will be integrated into existing systems as applicable. This capital request is for multiple sub-projects which will be more effective if they can be developed as part of a coherent strategic plan over the next three fiscal years. As described below, OBH has done thorough needs assessments to identify the needs of its various programs and the corresponding gaps in the current systems.

The Office of Behavioral Health (OBH) requests \$5.9M net total funds/General Fund for capital development for system and data needs to be spent over the next three fiscal years from FY 2023-24 through FY 2025-26. The Department has also submitted a separate operational request for 3.0 FTE for operational support for this capital development project. These staff would provide ongoing maintenance, support, and enhancements once the initial capital project is complete.

The following enhancements and systems are required:

1. **Improved and enhanced system capabilities (corresponds with Rows 6, 7, 12, 13, 16, 18 of Table 2):** The MHIs have leveraged analysis done by Greeley Consulting that has informed the types of systems needed to support hospital operations. FSDV had a needs/gap analysis done by Steadman Consulting to identify areas for program need and data infrastructure to match the growth of the Division. [FSDV Needs Analysis](#)

The approach defined here delivers functionality incrementally to the MHI Clinical, MHI Administrative, and FSDV Forensic Services teams. This rollout approach builds on each delivery. A centralized application and database are foundational to the approach. Data integrity would be preserved by requiring data input and maintenance standards along with security protocols built into the tools to allow and restrict the ability to add, modify and delete data by roles. Leveraging that foundation, dashboards such as My-Tasks, Metrics, Capacity Tracking, and Patient Status can be built to deliver on-demand access to important information, increasing team productivity. Reporting and system generated notifications can be developed concurrently, leveraging the centralized database, reducing manual efforts to research updates to client case files from internal and external sources.

2. **Document Repository (corresponds with Rows 9, 18 of Table 2):** Implement a proven document repository tool that can organize, store, and provide the appropriate access and security to those individuals who need to read, create, or update the documents.
3. **Automated Testing (corresponds with Row 18 of Table 2):** Implement an automated testing tool, which would be used on in-house developed forensic systems to playback pre-recorded and predefined test cases, compare the results to expected behavior, and report pass/fail. Once the test cases are created, they can be executed

repeatedly with minimal effort, reducing testing time from days to minutes. The automated testing tool will also support regression testing needed for new functionality deployment. The use of automated testing tools allows for extensive testing with minimal user intervention once the test cases are developed, which is exponentially more efficient and effective than manual testing.

4. **Enhanced Information Management Team Staffing (corresponds with Rows 8, 23, 24 of Table 2):** The current delivery team of two members splits its focus between production support and new development implementation. While much progress has been made, the rollout of functionality and solutions to the current problems could be accomplished more quickly with additional team members, who would be contracted only for the duration of the three-year project. The Information Technology team uses a scaled down version of the Agile methodology due to its small team size. As a result, each team member must support multiple Agile roles, splitting their focus and productivity.

The standard size of an Agile Delivery team is five to nine members, made up of developers, testers, and business analysts. To round out the team, a product owner and scrum master have distinct and separate roles. The consultants recommend building out an Agile team consisting of the following staff roles:

- **Product Owner:** responsible for defining the direction of a project, rooted in a clear understanding of what the business and users need from the product being developed, and communicating these needs to the scrum team;
- **Scrum Master:** responsible for ensuring that the team follows Agile best practices and addressing and removing any productivity blockers team members may experience;
- **.Net Software Developers:** senior and junior developers to handle both ongoing maintenance and new development; and
- **Business Analyst:** responsible for documenting business requirements, coordinating between the customer and the product owner to define criteria for acceptance tests, performing acceptance testing, and building out automated testing scripts.

To expedite delivery of functionality to the business teams, a defined engagement with consultants with specialized expertise in Agile information technology development will fill the roles of product owner and scrum master during the first two years. This will allow the analysis to begin quickly after the start of the fiscal year while development and business analyst resources are recruited and onboarded. The scope of work of the consultant team would be staff augmentation for the product owner and scrum master roles. During the analysis phase, consultants will work with the current OBH delivery team and those onboarding to build and groom the functionality backlog. This includes documenting business requirements and facilitating development team conversations about transforming the identified business needs into IT deliverables within OIT and OBH IT standards. Additionally, consultants will build a solid Agile foundation within the team, establishing team norms, building repeatable practices, and increasing team productivity. Agile training will take

place in a hands-on environment with a clearly defined plan to transition the product owner and scrum master roles back to the OBH delivery team. Once transitioned, the OBH Delivery team will rotate the roles of scrum master and product owner, further strengthening their Agile expertise.

Evidence-Continuum

Outputs being measured	Staff time spent manually processing data		
Outcomes being measured	N/A		
Evaluations	Pre-Post	Quasi-Experimental Design	Randomized Control Trial
Results of Evaluation			
SB21-284 Evidence Category and Evidence Continuum Level	Step 2		

Promoting Equitable Outcomes

Historically underserved population or group ¹	Description of existing equity gap(s)	How does the request affect the gaps? (quantify wherever possible).
Individuals with mental illness	Individuals with mental illness are overrepresented in the criminal justice system and more likely to be incarcerated or served in restrictive settings.	This request supports providing timely and high quality services to ensure that individuals with mental illness have appropriate clinical care and other services, including adherence to procedural protections in the criminal justice system.

Assumptions and Calculations

The Department anticipates its request of \$5.9 million for information technology capital development will be spent over three years as follows.

Table 2: Breakdown of Costs					
	Project/System	FY 2023-24	FY 2024-25	FY 2025-26	Assumptions
1*	RLDatrinx Configuration/Integration to DW	\$25,000*	\$15,000	\$15,000	Integration to DW and then enhancements and maintenance costs
2*	REDCap Configuration/Integration to DW	\$20,000*	\$10,000	\$10,000	Used MARS AI (Application Programming Interface FY21/22 project) for estimation of costs as the MARS API uses Mulesoft Integration platform, which is OIT's tool of choice for implementing APIs.
3	REDCap Reporting Add Ons contractor	\$10,000	\$10,000	\$10,000	Contractor to assist in adding RedCap extensions for reporting
4*	MuleSoft API development	\$17,576	\$17,576	\$17,576*	Current pricing is 8,788 (expect we will have

¹ The characterization of the population impacted by the budget request is at the discretion of each department. However, the [Colorado Equity Alliance](#) often refers to common identities when discussing the history, institutions, and policies in Colorado. The "Big 9" include: Ability (mental or physical neurodivergence), age, ethnicity, gender, race, religion/religious minorities, sexual orientation / gender identity, socio-economic status / class, and body size.

					potential of 2 more APIs)
5*	Power BI or Tableau Dashboards and DW integration	\$85,000	\$60,000	\$60,000*	Depending on level of work, Power BI Enterprise is \$4,995 per month; project will need to include data source connection
6*	Servers	\$36,000	\$60,000	\$72,000*	\$500 per month for 12 servers (includes development, testing and production servers for both MHI and FSDV (6 servers for FY 2023-24, 10 for FY 2024-25, 12 for FY 2025-26)
7*	Silver Data Encryption	\$15,000	\$45,000	\$75,000*	Data Encryption at Silver Level which is 250 per database per month (we are estimating with MHIs and FSDV there will eventually be 25 databases over the 3 years developed (5 Databases FY 2023-24, 10 FY 2024-25, 10 FY 2025-26). Please note price will increase or decrease if level is change to gold or bronze) Costs are cumulative per each database added so final FY is 25 DBs
8	External Consultants - Agile Expertise	\$419,994	\$209,997	\$0	Agile expertise for FSDV module development - product owner and scrum master consultants full time for year one and 50% time for year two
9*	Document Management Tool	\$100,000*	\$42,000	\$42,000	FY 2023-24 Implementation costs in year 1. Annual license costs \$35 per user per year in years 2 and 3. (After the project, license costs would shift to operational)

10*	QA tool	\$0	\$250,000*	\$10,000	Open source contractor 1 year to set up, train, and hand off in year 2; maintenance in year 3
11	FSDV Notifications	\$0	\$150,000	\$0	Infrastructure from OIT exists this would be developing this into the module
12	FSDV Project Management from OIT	\$206,000	\$206,000	\$206,000	OIT Project Management per year
13	FSDV Business Analyst Support for full time	\$264,000	\$264,000	\$264,000	OIT Business Analyst per year
14	MHI Project Management from OIT	\$206,000	\$206,000	\$206,000	Program/Project Management
15	MHI Business Analyst Support for full time	\$264,000	\$264,000	\$264,000	OIT Business Analyst per year
16	OIT FSDV Development Hours	\$149,500	\$149,500	\$149,500	OIT Development at 115 per hour for average of 260 development hours per module (expecting 15 modules)
17	OIT MHI Development Hours	\$79,734	\$79,734	\$79,734	OIT Development at 115 per hour for average of 260 development hours per module (expecting 8 modules)
18	OIT FSDV Solution Engineering	\$19,334	\$19,334	\$19,334	OIT Solution Engineering for 4 projects at 116 per hour estimate of 500 hours over the four projects
19	OIT MHI Solution Engineering	\$9,667	\$9,667	\$9,667	OIT Solution Engineering for 2 projects at 116 per hour estimate of 250 hours over the two projects
20	Tableau Creator and viewer license Licenses	\$37,410	\$37,410	\$37,410	Increase from 5 to 10 licenses 5 licenses currently cost \$18,705 - and 200 viewer licenses
21	Qualtrics/Survey Monkey	\$5,000	\$5,000	\$5,000	Survey Tools (Qualtrics is priced at \$5,000 per year)
22	BEHR Data Analytics	\$75,000	\$50,000	\$50,000	Cerner Data Analytics module pricing is \$50,000 to \$75,000 per year

23	IM Staff Training	\$45,000	\$45,000	\$45,000	Tableau training is the past was \$25,000; will also need DAX training, .Net Training, CJIS Training , Scrum Training, Agile Training FHIR Training , PowerBI Training
24	IM Staff Licensing - visual studio licensing	\$4,736	\$0	\$0	Current pricing is \$2,368 for 4 and would like to move to 8 for 3 years starting in FY 2023-24
	Totals	\$2,093,951	\$2,205,218	\$1,647,221	\$5,946,390

* These rows include items that will be subject to periodic replacement and therefore are included in the calculation of the 10% set aside.

Table 3: Calculation of 10% Set Aside for Replacement		
Row from Table 2	Project/System	Cost
1*	RLDatrrix Configuration/Integration to DW	\$25,000
2*	REDCap Configuration/Integration to DW	\$20,000
4*	MuleSoft API development	\$17,576
5*	Power BI or Tableau Dashboards and DW integration	\$60,000
6*	Servers	\$72,000
7*	Silver Data Encryption	\$75,000
9*	Document Management Tool	\$100,000
10*	QA tool	\$250,000
<i>Subtotal</i>		\$619,576
10% Set Aside		\$61,958

The following summary table illustrates the project's costs. The amount requested in FY 2023-24 is intended to be spent over three fiscal years consistent with capital appropriations.

Assumptions and Calculations Summary Table						
	FY 2022-23 Appropriation	FY 2023-24 Request	Change	FY 2024-25 Request	Ongoing Costs past FY 2024-25?	Set aside for replacement in out years FY 2026-27 ²
Total Funds ¹	\$0	\$5,946,390	\$5,946,390	\$0	\$0	\$61,958
General Fund		\$5,946,390	\$5,946,390	\$0	\$0	\$61,958

1. OBH requests that funding be added to a new subcategory under section (6) Office of Behavioral Health, (A) Administration line item.
2. [Set aside calculation](#)

Supplemental, 1331 Supplemental (Est time allocation 5%)

Not applicable



COLORADO

Department of Public Health and Environment

Jared Polis
Governor

Jill Husaker-Ryan
Executive Director

FY 2023-24 Request Year-IT Capital Request

Signature	Signature
Date	Date

Request – Department IT Capital Construction Project: [priority number]

Summary of Request	Total Funds	CCF-IT	Cash Funds	Reappropriated Funds	Federal Funds
FY 2023-24	\$1,410,064	\$1,410,064	\$0	\$0	\$0
FY 2024-25	\$515,170	\$515,170	\$0	\$0	\$0
FY 2025-26	\$0	\$0	\$0	\$0	\$0
FY 2026-27	\$0	\$0	\$0	\$0	\$0

Categories of IT Capital Projects

System Replacement (costs escalating, failing technology, software or vendor support ended, or new technology, e.g., DRIVES, CHATS)	System Enhancement Regulatory Compliance (new functionality, improved process or functionality, new demand from citizens, regulatory compliance, e.g, CBMS)	Tangible Savings Process Improvement (conscious effort to reduce or avoid costs, improve efficiency, e.g., LEAN, back office automation)	Citizen Demand “The Ways Things Are” (transformative nature of technology, meet the citizens where they are, e.g., pay online, mobile access)
---	---	--	--

Request Summary:

The Colorado Department of Public Health and Environment is requesting \$1,925,232 General Fund Capital IT funds to begin phase two of the Vital Event System of Colorado (VESCO) system development and implementation. In FY 2023-24, \$1,410,064 in General Fund Capital Construction IT funds is needed to begin the Electronic Death Registration System (EDRS) module. In FY 2024-25, \$515,169 is needed for accompanying Fetal Death Registration System, Induced Terminations of Pregnancy (ITOPS) and Marriage and Dissolution systems.

This request from the Office of the State Registrar of Vital Statistics (OSRVS) – otherwise known as the State Vital Records program – is to finalize the Vital Event System of Colorado (VESCO) system project that is currently underway by developing the remaining modules as indicated in the capital construction request that was submitted in 2018. As part of the VESCO initiative, CDPHE wishes to develop and

migrate current legacy systems for marriage, adoption, paternity, divorce, fetal death, and induced terminations of pregnancies into the VESCO system to realize the same benefits as developing the death module within VESCO. The remaining modules that we need in order to finalize our vital records system are the:

- Electronic Death and Registration System (EDRS)
- Fetal Death Registration System
- Induced Terminations of Pregnancy (ITOPS)
- Marriage and Dissolution System

Project Stakeholders

- **Office of the State Registrar of Vital Statistics (OSRVS)**
 - The Office of the State Registrar of Vital Statistics are the owners of the system. They oversee the vital records system in Colorado and ensure that the system design and implementation is going according to plan.
- **CHED Informatics Branch Staff**
 - This team within the Center for Health and Environmental Data Division at CDPHE are involved in managing this project, including all of the modules in this request, and work hand-in-hand with OIT to ensure that the project deliverables are met according to plan.
- **OIT**
 - OIT is currently involved in developing the birth registration and certificate issuance modules in VESCO, and would be the ones to develop the remaining modules in this request with direction from the CHED Informatics Branch Staff.
- **County Vital Records Offices Staff**
 - County Vital Records staff use the current version of the EDRS on a daily basis to review, access and issue birth and death certificates to the members of their jurisdictions.
- **Funeral Homes**
 - Funeral homes are directly involved in the registration process for the vast majority of death certificates and thus would be key stakeholders in the EDRS module.
- **Coroners**
 - Like funeral homes, county coroners are also instrumental in the registration process for a large portion of death certificates in Colorado, and thus are also key stakeholders in the EDRS module.
- **Hospital Registrars & Physicians**
 - Hospital registrars and physicians use EDR to certify the cause of deaths and would also be users for the Fetal Death module that is part of this request.
- **Induced Termination of Pregnancy (ITOPS) Providers**
 - They would be involved in the reporting of fetal deaths and induced terminations of pregnancies and thus would be users of the ITOP reporting system module.

- **Clerk and Recorders**
 - Clerk and Recorder are required to electronically transmit marriage data to OSRVS. This is already enabled in the current Marriage and Dissolution system.
- **Colorado Judicial Courts**
 - Courts electronically transmit dissolution data to OSRVS. This is already enabled in the current Marriage and Dissolution system.

Project Description:

Module: Electronic Death Registration System (EDRS)

The Department is requesting \$1,410,064 in Capital Construction IT General Fund beginning in FY 2023-24 for the Electronic Death Registration System module.

Currently, over 99% of the approximately 50,000 annual deaths in Colorado are registered either partially or fully electronically. Coroners, Funeral Homes, and Physicians access the EDRS system to enter death data, including demographic and medical data. State and county vital records offices use this data to issue death certificates from the COVIS system. All Colorado county vital records offices are connected to the current COVIS system and have the ability to search and issue death certificates statewide. Customers order certified copies of death certificates for various reasons including settling of insurance matters and benefits. Death data is also used to collect, analyze and disseminate de-identified vital statistics on important issues such as infant and maternal mortality, life expectancy and more.

Given the percentage of death records registered electronically, paper records are rare. Death records are maintained in the electronic system and by microfilm as a backup. An electronic system provides for the timely collection of death data, the statewide issuance of death certificates, and the collection and reporting of vital statistics state and nationwide.

Colorado's current EDRS is a vendor-managed system. OSRVS has been using this system since 2015 to register and update death records for all Coloradans. Colorado county coroner offices, funeral homes, physicians, state and local vital records deputy registrars use this system for the registration of all death reports in Colorado.

With the replacement of COVIS underway, CDPHE wishes to replace EDRS by developing the equivalent module within the VESCO system. This will allow for tight integration between the modules, significant reduction of maintenance costs, and continued ability to issue death certificates and manage all user accounts within one system. Without replacing our vendor-managed EDRS, we will have to continue paying for annual maintenance costs of ~\$200k per year (without out year escalations), manage the risk of connections between the EDRS and our VESCO system possibly breaking through ongoing system updates, and require vital records deputy registrars located within 60 LPHAs and other county vital records offices to log into various systems, significantly costing time and effort.

Modules: Fetal Death Registration System & ITOPS Systems

The Department is requesting \$402,606 in Capital Construction IT General Fund beginning in FY 2024-25 for the Fetal Death Registration system (\$254,165) and ITOPS system (\$148,441) modules.

Fetal Deaths in Colorado are currently reported through a paper-based system. Hospital registrars and funeral homes complete a paper or PDF form and submit it via mail or e-mail to either the county or state vital records office for registration, and in some cases, for a disposition permit (burial, cremation, etc.) as well. Because fetal deaths are not as common, certifiers and hospital registrars will often omit entering information in required fields of the form and make many mistakes that require follow up calls from OSRVS staff during the quality assurance (QA) process. Once the QA process is complete, an OSRVS staff member must perform data entry of the fetal death system into a Microsoft Access database that is not supported by OIT. All of this results in a highly inefficient business process due to lack of modern technology that could automate the quality assurance process significantly, and a risky method for storing vital statistics information of Coloradans that is confidential by statute (C.R.S. 25-1-117). By replacing this paper-based system with an electronic fetal death registration module within VESCO, that is accessible via a secure web-based system, the timeliness and accuracy of fetal death registrations could increase significantly while also providing personnel cost-savings of approximately .25 FTE.

Induced terminations of pregnancy (ITOPS) in Colorado are also reported through a paper-based system. Like fetal deaths, these vital events are reported by paper means by either completing a printed form and completing by a pen or by printing out a fillable pdf form that is then submitted to OSRVS by mail. Although a large portion of ITOPS are electronically reported by one large provider of these services, there are many other providers across Colorado that perform these services and must currently report via this paper-based process. Similar to fetal deaths QA but to a lesser extent, these forms may require a callback from time to time if the writing is illegible or if the form is incomplete. But identical to fetal deaths, ITOPS are data-entered by OSRVS staff into a Microsoft Access database that is not supported by OIT. By developing a web-based module within VESCO that will allow providers to complete and submit their reports via a secure web-based system, the quality assurance process will be automated and the need for data-entry by OSRVS staff will be completely eliminated, improving quality and timeliness as a result.

Module: Marriage and Dissolutions System

The Department is requesting \$112,564 in Capital Construction IT General Fund beginning in FY 2024-25 for the Marriage and Dissolution system modules.

The marriage and dissolutions system is used both for cross-reference by state and county vital records office staff when verifying a relationship of a requestor of a birth or death certificate for the purposes of proving a direct and tangible interest in a confidential vital record, and for issuing verifications of Colorado marriage to

customers who need it for travel, identification or souvenir purposes. This system houses all records of executed marriages in Colorado as the data is currently transmitted electronically by all of the county clerks and recorder offices in Colorado. Although the system we have is currently electronic, it is separately housed, and given the opportunity to modernize these other systems, we would like to request to add this one as well in order to improve ease of access for our system users across the state, which include all county clerk and recorders, county and state vital records deputy registrars. By adding this module into VESCO, we would realize the benefit of users only needing to log into one system (VESCO) and the possibility of a unified search across all vital event records for those that have the right to do so. For example, many Clerk and Recorders also act as the local vital records office and so utilizing this one login and search will improve processing times for their customers. Lastly, by incorporating the system into VESCO, this will allow all vital event systems to be on a single OIT supported codebase and platform thus reducing maintenance costs and support.

Technical Overview

The current EDRS and COVIS systems are currently housed on a single Office of Information Technology (OIT) 2008 server located at eFORT. The CDPHE OIT server team and database administrators work closely with the system vendor to maintain the equipment required to keep this system functional. As mentioned above, the fetal death and ITOPS data are housed within Microsoft Access databases and they are not supported by OIT.

In order to replace these outdated systems, the department is currently developing the VESCO system that will bring all of the vital records systems under one architectural framework. The department will require funds to develop the new custom modules designed and implemented by OIT developers. The system is an Amazon Web Services (AWS) web based system and will be developed in phases. Phase one is already underway and includes a web-based portal for data exchange, HIPAA compliant electronic reporting from hospitals and midwives, electronic billing capabilities, creation and maintenance of workflows, integration with the current electronic death reporting system, data quality assurance (QA) capabilities, data analysis and reporting functionality, records retention and the ability to issue certificates and track customer data by local and state vital records offices.

Phase 2 – which is what this request is asking for CDPHE to enter into – will include replacing the current vendor based Electronic Death Registration system, the Microsoft Access based systems for tracking Fetal Deaths and Induced Terminations of Pregnancy (ITOPS) and migrating the current Marriage and Dissolution system that has been developed by the same development team. The system must be compliant with all state and federal laws, including health care privacy, in order to prevent the release of personal health information and prevent the ability for unauthorized parties to obtain death certificate data. Death certificates can be fraudulently used to maintain an individual's identity and to obtain benefits after death. Data from the current EDRS system will need to be migrated from OIT servers to the new AWS servers, providing the necessary data protection and disaster recovery that is currently lacking. Data

migration will be critical as all Colorado death information from 1910 to present is currently housed in, and can be issued from, the COVIS system.

Systems Integration Opportunities

The VESCO system is an Amazon Web Services (AWS) web-based system and allows for easier access for approved data providers and all 60 local vital records offices in the state. Transitioning to a web based system opens up mobile platform opportunities and makes the system operating system agnostic.

The system will have improved integration with the state's accounting system, Coroner case management and Funeral Home systems. The new platform will also allow for potential integration with hospital electronic health records (EHRs) and the state's health information exchange known as the Colorado Regional Health Information Organization (CORHIO) by utilizing the HL7 data messaging standard to securely share clinical data. Improvements in data storage structure will allow improved access by approved stakeholders for the issuance of certificates and the analysis of vital statistics.

Currently, Coroners and Funeral homes, Clerk and Recorders are required to enter demographic and/or medical information into their own specific system and then enter much of this same information into the various CDPHE systems. The potential for integrating duplicate data fields within the EHR and VESCO will reduce double data entry for data providers, reduce the risk of human error impacting data quality, streamline data workflows and ensure that all of the information can be accessed, shared and integrated as appropriate for all parties involved.

In addition, the limitations of the current systems has led to the need for multiple Microsoft Access databases that perform functions that could be consolidated in a new system. These include databases for the ITOPS and fetal death paper-based systems. The Marriage and Dissolution system can also be merged into the new VESCO system. By including these modules in a new system to collect and report this data, reduction of support costs for onsite OIT staff and OSRVS staff time used for manual data collection and entry, quality assurance and reporting can be realized.

In addition this will allow the department to reduce its maintenance costs for the current third party vendor systems.

Background of Problem or Opportunity:

A capital construction request was submitted in 2018 in order to begin the first phase of this project, which is to replace the Colorado Vital Information System (COVIS) with an OIT and CDPHE developed modern electronic birth registration and certificate issuance system that would encompass the first two modules of the the Vital Events System of Colorado (VESCO). COVIS, a vendor-developed solution, was deployed in 2007 and is used to register and modify birth certificates, as well as issue birth and death certificates. Through COVIS, OSRVS is able to collect and report on Colorado birth statistics including, but not limited to, birth defects, maternal and infant mortality,

and teen birth rates. The purpose of that initial request item was to replace COVIS – the birth registration, modification and issuance functions only – as it had become outdated and unable to fulfill the needs of state and local vital records offices, data providers, and vital statistics stakeholders. The VESCO system, which houses all of the functional modules, is being developed on the OIT managed Amazon Web Services platform and conforms to the State's Cloud First initiative.

Justification:

Business Process Analysis

A large-scale process improvement event was conducted in Vital Records in 2015. Paper and electronic processes were mapped and metrics and outputs were defined with input from program staff. As a result, work flows for the issuance, modification and registration of records were streamlined and these operational tasks were consolidated into an Operations Section. Other key functions were aligned to create a new Program Support Section led by an expert in data technology. This new section is responsible for identifying and implementing improvements to program data systems including data collection, reporting, security and training for data providers. This section conducted outreach in 2016-2017 to data providers and data users to define the business requirements for the future of Colorado's electronic vital events reporting system. Efficiencies include:

- ❖ OIT staff will no longer be required to assist with server maintenance, push of system updates, and setting up new user accounts
- ❖ COVIS (which is tightly integrated with EDRS) must be installed onto a user's computer. By being web based, the new VESCO system helps OIT with computer replacement, imaging and administrative and security rights.
- ❖ Data providers and OSRVS will save time by reducing double data entry (paper form data entry by providers and Microsoft Access database entry by OSRVS staff)
- ❖ Transitioning to a new platform would allow for better security, and tighter connections to our other web based platforms, such as the program's Document Management System, Perceptive and will allow for the latest backup technologies to be employed.

An RFI was conducted on 3rd party vital records systems in 2016, which included information on all possible modules (Birth, Death, ITOPS etc.).

OSRVS has taken the time to continue documenting and making their business processes more efficient for the new system.

Cost-Benefit Analysis and Project Alternatives (per H.B. 15-1266)

The cost savings associated with the implementation of a modern electronic vital events system will be obtained through the reduction in duplicate data entry and data entry errors, better alignment of resources, and the consolidation of current software systems.

Currently, all data entry must be done manually by funeral homes, coroners, and physicians since they have to perform in both their software and again in the EDR system. The department has identified VESCO as an IT solution that can utilize electronic messaging for the majority of data fields so that data can be transmitted directly from the external software systems into the VESCO system. The benefits of doing this will not only be recognized by data providers, but also by OSRVS staff since the data quality will be improved and time spent dealing with data errors will be reduced by minimizing double data entry for data providers.

In addition, the limitations of the current COVIS system has led to the need for multiple Microsoft Access databases that perform functions that could be consolidated in a new system. These include databases for induced termination of pregnancy and Fetal death. The Marriage and Dissolution system can also be merged into the new VESCO system. By including modules in a new system to collect and report this data, support costs for onsite OIT staff and reduction or elimination of employee staff time used for manual data collection, quality assurance and reporting.

If the current EDR system is not updated, the state will continue to pay a vendor ~\$200k annually in EDR system maintenance for a stand-alone module that is not sufficiently integrated with others systems, preventing an optimally efficient solution that would improve quality and timeliness of transmission of confidential public health and identity data. Also, the current IT solution that does not meet current and future business needs and meet best practices for data security and integrity.

Assumptions for Calculations -

Table 1: Death Registry

Contracted OIT Personnel	Monthly cost at 100% time	Months	Percent Time	Cost
Project management & user interface design (Project Manager II)	\$11,691.00	36	100%	\$420,876.00
Leadership (Program management III)	\$13,417.31	36	20%	\$96,604.63
Quality assurance testing (Data management IV)	\$9,343.69	12	100%	\$112,124.28
Data conversion (Data management IV)	\$9,343.69	6	100%	\$56,062.14
Data coordination (Data management III)	\$7,521.19	36	50%	\$135,381.42
<i>Subtotal</i>				<i>\$821,048.47</i>
Contracts	Hourly Rate	Months	Hours	Cost
Application/Integration Development	\$104	36	4,644.00	\$485,019.36
AWS (development only)				\$6,000.00

<i>Subtotal</i>				\$491,019.36
Operating				
Branch operating (computers, supplies , licenses, training)				\$30,850.00
Division Administrative support				\$67,145.89
<i>Total personnel</i>				\$888,194.36
<i>Total operating</i>				\$521,869.36
Grand total				\$1,410,063.72

Table 2: Fetal Death

Contracted OIT Personnel	Monthly cost at 100% time	Months	Percent Time	Cost
Project management & user interface design (Project Manager II)	\$11,691.00	17	10%	\$19,874.70
Leadership (Program management III)	\$13,417.31	17	5%	\$11,404.71
Quality assurance testing (Data management IV)	\$9,343.69	6	50%	\$28,031.07
Data conversion (Data management IV)	\$9,343.69	3	100%	\$28,031.07
Data coordination (Data management III)	\$7,521.19	17	25%	\$31,965.06
<i>Subtotal</i>				\$119,306.61
Contracts	Hourly Rate	Months	Hours	Cost
Application/Integration Development	\$104	9	1,161.00	\$121,255
AWS (development only)				\$1,500.00
<i>Subtotal</i>				\$122,755
Operating				
Division Administrative support				\$12,103.07
<i>Total personnel</i>				\$131,409.68
<i>Total operating</i>				\$122,754.84
Grand total				\$254,164.52

Table 3: ITOPS

Contracted OIT Personnel	Monthly cost at 100% time	Months	Percent Time	Cost
Project management & user interface design (Project Manager II)	\$11,691.00	13	10%	\$15,198.30
Leadership (Program management III)	\$13,417.31	13	5%	\$8,721.25
Quality assurance testing (Data management IV)	\$9,343.69	5	50%	\$23,359.23
Data conversion (Data management IV)	\$9,343.69	3	100%	\$28,031.07
Data coordination (Data management III)	\$7,521.19	13	25%	\$24,443.87
<i>Subtotal</i>				\$99,753.71
Contracts	Hourly Rate	Months	Hours	Cost
Application/Integration Development	\$104	3	387	\$40,418.28
AWS (development only)				\$1,200.00
<i>Subtotal</i>				\$41,618.28
Operating				
Division Administrative support				\$7,068.60
<i>Total personnel</i>				\$106,822.31
<i>Total operating</i>				\$41,618.28
Grand total				\$148,440.59

Table 4: Marriage & Dissolution

Contracted OIT Personnel	Monthly cost at 100% time	Months	Percent Time	Cost
Project management & user interface design (Project Manager II)	\$11,691.00	9	10%	\$10,521.90
Leadership (Program management III)	\$13,417.31	9	5.00%	\$6,037.79
Quality assurance testing (Data management IV)	\$9,343.69	3	50%	\$14,015.54
Data conversion (Data management IV)	\$9,343.69	2	100%	\$18,687.38
Data coordination (Data management III)	\$7,521.19	9	25%	\$16,922.68
<i>Subtotal</i>				\$66,185.28
Contracts	Hourly Rate	Months	Hours	Cost
Application/Integration Development	\$104	3	387	\$40,418
AWS (development only)				\$600.00
<i>Subtotal</i>				\$41,018
Operating				
Division Administrative support				\$5,360.18
<i>Total personnel</i>				\$71,545.46
<i>Total operating</i>				\$41,018.28
Grand total				\$112,563.74

Additional information on anticipated maintenance costs, additional assumptions and a visual representation of project timing (and the relationship of modules) may be found in the IT CC Phase II VESCO Charts attachment.

Consequences if not Funded -

Failure to fund an upgrade to the current EDRS system could have a negative impact on customers, data providers, data users and state and local vital records staff. Consequences include the inability to perform key business functions, inability to maintain integrity of data, low image and functionality of Colorado vital records services, loss of revenue due to inability to provide services to customers (electronic system is the only mechanism to issue death certificates in local offices throughout the state), and risk of unsupported IT infrastructure/software in the future.

The current vendor based EDRS maintenance cost is annually ~\$200k with escalation of costs in the out years. The system is an older system and is incurring an ongoing technology debt. EDRS was graded as a D in the latest OIT review (2021). Since it is a vendor based system any integration options will incur significant cost, time and

resources to implement. The Fetal Death and ITOPS databases are Microsoft Access databases and not supported by OIT. There is significant risk for data management and long term stability. Failure of the EDRS would require a return to paper-based processes, much like the Fetal Death and ITOPS paper-based systems.

Due to the tight integration between COVIS and EDRS, EDRS must remain on an SQL Server 2008 platform for as long as COVIS is active. SQL Server 2008 is no longer supported by Microsoft and poses an increasing security risk as it can no longer be maintained to current security standards. Once COVIS is depreciated, EDRS could be moved to a newer server but that would require significant work and cost by the vendor.

Change Management

For training, the Department will develop materials and resources for the various stakeholders who will require access to the system. This will include, but is not limited to, system and technical training for the system administrators and those supporting the system. For non-technical users, the department will develop in-person instructor-led classes, webinars, and on-demand computer training. In addition, VESCO will include online help. Lastly, VESCO will include a training environment to allow for hands-on learning.

The project will include:

- 1) user-acceptance testing;
- 2) unit testing;
- 3) system integration testing;
- 4) performance testing; and
- 5) data migration testing.

Regarding key stakeholder management, the department will conduct outreach sessions to solicit input from all the main stakeholder groups. In addition, the department has provided an online form for stakeholders to submit suggestions and requests for functionality. This online form is currently active and has been used to inform the functionality included in phase 1 of the VESCO project.

Alignment with OIT Best Practices and Standards

This aligns with OIT's Cloud First initiative and will meet OIT required security standards.

Procurement

The VESCO project is a custom-built application utilizing OIT resources. Therefore no traditional contract or solicitation is required. Phase 1 of the project has been approved through Gate 3.

Disaster Recovery and Business Continuity

VESCO utilizes an application in the cloud. The SaaS (Software as a Service) platform offers VESCO more capacity to meet disaster recovery requirements as it will enable continuous replication across many locations for rapid recovery after an IT outage and full scale-up

time methods upon the restoration of an outage. VESCO follows OIT cloud-first service models for program infrastructure requirements; cloud governance, disaster recovery and readiness will therefore be managed by OIT, and CDPHE will coordinate such efforts with OIT to ensure restoration times, backups and disaster recovery policies, methods and documentation are in accordance with all requirements.

VESCO will automatically back up all system data on a daily basis and provide database replication for disaster recovery backup. Database replication currently occurs nightly; however, within CDPHE' current OIT-hosted infrastructure, this occurs within the same location as production servers. From a true disaster recovery perspective, having OIT servers in a separation location for replication or using cloud-based hosting solutions would be more appropriate disaster recovery solutions.

Accessibility Compliance

VESCO is being designed to meet 508 compliance standards as well as standards for accessibility as promulgated by OIT.

Impact to IT Common Policy (For Statewide OIT Projects Only) -

This does not apply to the proposed project.

CC-IT: CAPITAL CONSTRUCTION INFORMATION TECHNOLOGY REQUEST FOR FY 2023-24								
	Department	Colorado Department of Public Health and Environment			Signature Department Approval:		Date	
	Project Title	VESCO Phase II FY 2023-24 Capital Construction Request			Signature OIT Approval:		Date	
	Project Year(s):	FY23-24, FY24-25			Signature OSPB Approval:		Date	
	Department Priority Number							
	Five-Year Roadmap?				Name and e-mail address of preparer:			
Revision? Yes x No If yes, last submission date: _____		Total Project Costs	Total Prior Year Appropriations	Current Total Request	Year 2 Request	Year 3 Request	Year 4 Request	Year 5 Request
A. Professional Services								
(1)	CHED Personnel	\$ 1,020,442	\$ -	\$ 776,070	\$ 244,372		\$ -	\$ -
(2)	Quality Assurance	\$ 177,530	\$ -	\$ 112,124	\$ 65,406	\$ -	\$ -	\$ -
(3)	Independent Verification and Validation	\$ 70,000	\$ -		\$ -		\$ -	\$ -
(4)	Training	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(5)	Leased Space (Temporary)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(6)	Feasibility Study	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(7a)	Inflation for Professional Services	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(7b)	Inflation Percentage Applied		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(8)	Other Services/Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(9)	Total Professional Services	\$ 1,197,972	\$ -	\$ 888,194	\$ 309,777	\$ -	\$ -	\$ -
B. Software Development/Acquisition								
(1)	OIT Developers	\$ 687,111		\$ 485,019	\$ 202,091			
(2)	Amazon Web Services	\$ 9,300	\$ -	\$ 6,000	\$ 3,300		\$ -	\$ -
(3a)	Inflation on Software	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(3b)	Inflation Percentage Applied	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(4)	Software COTS Purchase Interest	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -
(5)	Total Software	\$ 696,411	\$ -	\$ 491,019	\$ 205,391	\$ -	\$ -	\$ -
C. Equipment /Operating								
(1)	Servers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(2)	PCs, Laptops, Terminals, PDAs	\$ 20,567	\$ -	\$ 20,567	\$ -	\$ -	\$ -	\$ -
(3)	Printers, Scanners, Peripherals	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(4)	Network Equipment/Cabling	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(5)	Operating/Supplies	\$ 10,283	\$ -	\$ 10,283			\$ -	\$ -
(6)	Total Equipment and Miscellaneous	\$ 30,850	\$ -	\$ 30,850	\$ -	\$ -	\$ -	\$ -
D. Project Contingency								
(1)	5% project contingency	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -
E. Total Request								
Total Budget Request [A+B+C+D]		\$ 1,925,233	\$ -	\$ 1,410,064	\$ 515,169	\$ -	\$ -	\$ -
F. Source of Funds								
	GF	\$ 1,925,233	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	CF/RF		\$ -		\$ -	\$ -	\$ -	\$ -
	FF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
check (should = E)		\$1,925,233	\$0	\$0	\$0	\$0	\$0	\$0



COLORADO

The Governor's Office of Information Technology

Jared Polis
Governor

FY 2023-24 Supplemental/Budget Amendment-IT Capital Request | November 1, 2022

Anthony Neal-Graves
Executive Director

***Supplemental/BA – Department IT Capital Construction Priority: [CC-IT 01]
MACROBUTTON DoFieldClick [Modernizing Aging IT Systems: Continued Investment]***

Summary of Request	Total Funds	CCF-IT	Cash Funds	Reappropriated Funds	Federal Funds
FY 2023-24	\$22,655,995	\$22,655,995	\$0	\$0	\$0
FY 2024-25	\$0	\$0	\$0	\$0	\$0
FY 2025-26	\$0	\$0	\$0	\$0	\$0

Select One: Categories of IT Capital Projects (most are driven by one category with components of all)

X - System Replacement (costs escalating, failing technology, software or vendor support ended, or new technology, <i>e.g.</i> , DRIVES, CHATS)	System Enhancement Regulatory Compliance (new functionality, improved process or functionality, new demand from citizens, regulatory compliance, <i>e.g.</i> , CBMS)	Tangible Savings Process Improvement (conscious effort to reduce or avoid costs, improve efficiency, <i>e.g.</i> , LEAN, back office automation)	Citizen Demand “The Ways Things Are” (transformative nature of technology, meet the citizens where they are, <i>e.g.</i> , pay online, mobile access)
---	--	--	---

Supplemental/Budget Amendment Request Summary:

OIT is requesting \$22,655,995 in IT capital funding as another round of investment in remediating technical debt and the associated risk it poses to the state.

As with our last tech debt request, this request will enable the state to advance transformation of technology, improve security, and accelerate the use of digital services all in alignment with all of OIT's Wildly Important Goals (WIGs). This proposal specifically addresses the goal of transforming technology in the state by accelerating new technology and decommissioning legacy technology. The outcome will be an improved user experience and overall efficiency of government service delivery. The projects funded by this request will take up to three years to complete, requiring the funding to be available until FY 2025-26.

OIT manages, supports, and tracks approximately 1,121 applications, 1,617 databases, and 49,446 IT hardware and software assets for Colorado's state agencies. Currently OIT's agency customers are responsible for planning and allocating or requesting funds to refresh and replace legacy or out-of-compliance IT systems or assets. Budgeting for this work often falls behind immediate funding needs for the programs that serve Coloradans resulting in technical debt accrued from the extra staff hours and money needed to keep older and unsupported technology running.

Last year OIT's first ever request for technical debt funding was supported by the Governor's Office, OSPB, JTC and JBC, and was approved for funding through IT Capital. However, due to General Fund balancing our request was reduced to only \$53M, and there is still much work to be done.

Project Description:

The Governor's Office of Information Technology (OIT) requests \$22,655,995 in IT capital funds in FY 2023-24 to continue to reduce the technical debt and associated risk.

The solution is presented below in three categories: Security; Consolidation, Rationalization & Replatforming; and other technical debt. The cost estimates are approximations of the amount needed and include temporary staffing costs for the specific projects. Groupings are modular and projects could be selected from them, though the scale of impact would be greatly diminished. Unfunded technology debt from the FY 2020-21 Five Year Roadmaps totals \$465.1M across executive branch agencies. Across three categories of legacy debt and technology gaps, the urgently needed investment is at least \$22,655,995:

Category	PROJECT	Requested one-time funds
Security	Enterprise Identity (SSO, MFA, and Proof of Identity) - updated with ID concept paper	\$16,865,573
Other tech debt	IT ServiceHub Phase 3	\$2,044,312
R01 Budget Shortage and 40% Cost Increases	Infrastructure and Network Buildout	\$1,958,748
R01 Budget Shortage and 40% Cost Increases	Core Network Refresh	\$1,787,362
		\$22,655,995

Background of Problem or Opportunity and Justification:

OIT is accountable for keeping state technology secure and up-to-date but is challenged in doing this without 1) a significant reduction in technical debt and 2) a significant restructure of the way the state plans and budgets for end of life technology.

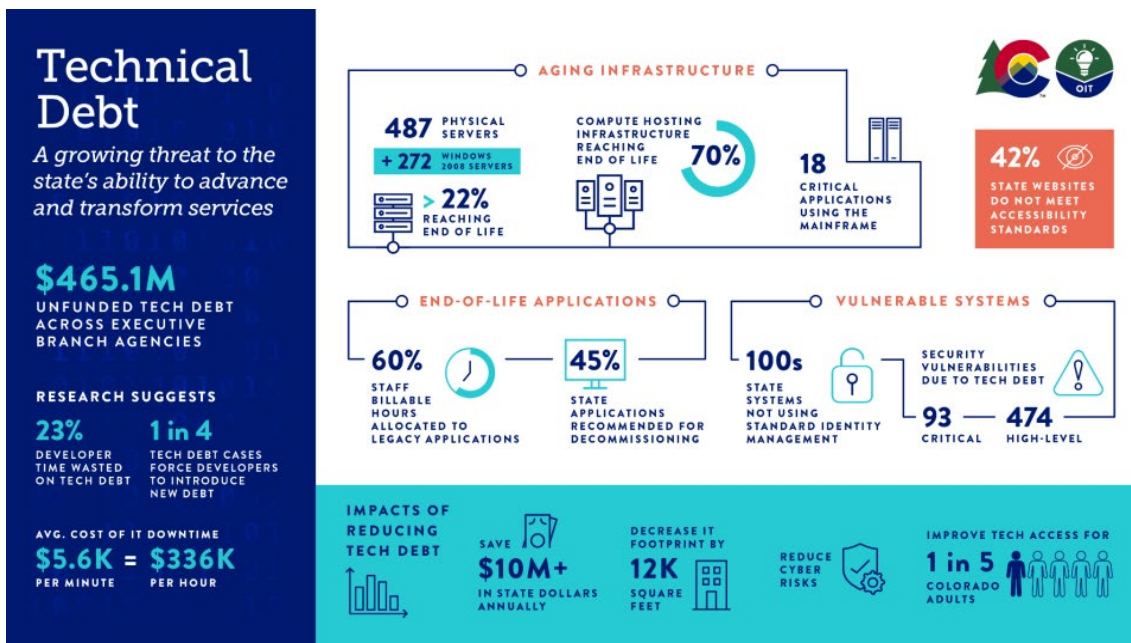
The state has an overwhelming amount of technical debt that continues to grow. About 45% of our staff time is spent maintaining legacy technology that requires extra work to keep it operating and secure. Unfunded technology debt from the FY 2020-21 Five Year Roadmaps totals \$465.1M across executive branch agencies.

This request continues to address the technology debt by presenting the projects that were not funded in the current budget cycle. Here are several examples that could be remediated with additional funding.

OIT currently has 577 legacy databases (35.7%) that are no longer supported and are out of compliance. As a result of the number, age, and custom nature of many applications, 75% of Enterprise Applications labor is devoted to maintaining legacy applications and only a few staff members are familiar with each application. Also, vendor support for Microsoft Server 2008 ended on January 14, 2020 and they are not providing security patches, resulting in applications left on 2008 servers being vulnerable to increasing security threats.

In addition to the security risk, the cost to the state to maintain these legacy systems is higher than modern technology both in terms of time and human resources. Because many are now considered outdated or use nonstandard coding languages, staff retirements or separations create a single point of failure risk. It's only the great amount of state effort and resources being spent on these legacy systems, and good fortune that prevents that risk from being realized. Over time, agencies have created a large number of disparate applications in response to evolving business needs. As those needs change and the underlying hardware and software become obsolete, many applications require modernization or consolidation.

Without intervention, the number of applications will continue to expand and maintenance costs will grow and crowd out spending on new application development.



Implementation Plan:

OIT has been authorized to prioritize which projects the funds are used on to reduce technical debt starting on July 1, 2023. Below are the current projects that OIT has prioritized to reduce technical debt:

Category	PROJECT	Requested one-time funds
Security	Enterprise Identity (SSO, MFA, and Proof of Identity) - updated with ID concept paper	\$16,865,573
Other tech debt	IT ServiceHub Phase 3	\$2,044,312
R01 Budget Shortage and 40% Cost Increases	Infrastructure and Network Buildout	\$1,958,748
R01 Budget Shortage and 40% Cost Increases	Core Network Refresh	\$1,787,362
		\$22,655,995

ADDITIONAL REQUEST INFORMATION				
Please indicate if three-year roll forward spending authority is required.		<input type="checkbox"/> Yes X <input type="checkbox"/> No		
Is this a continuation of a project appropriated in a prior year?		<input type="checkbox"/> Yes X <input type="checkbox"/> No		
If this is a continuation project, what is the State Controller Project Number?				
Please attach letter from OIT indicating review and approval of this project				
CONTINUATION HISTORY (DELETE IF NOT APPLICABLE)				
	FY 2022-23 Appropriated	FY 2023-24 Appropriated	FY 2024-25 Appropriated	Total Appropriations
Total Funds	\$53,284,560			\$53,284,560
Capital Construction Funds	\$53,284,560			\$53,284,560
Cash Funds				
Reappropriated Funds				
Federal Funds				
	FY 2022-23	FY 2023-24	FY 2024-25	Total
Amount Spent	\$2,655,443			\$2,655,443
Amount Encumbered	\$5,653,654			\$5,653,654
Total Funds Available	\$44,975,463			\$44,975,463

ESTIMATED PROJECT TIME TABLE		
Steps to be completed	Start Date	Completion Date
Modernizing Aging IT Systems	7/1/2022	6/30/2023
Modernizing Aging IT Systems – Continued Investment	7/1/2023	6/30/2026

CASH FUND PROJECTIONS (DELETE IF NOT APPLICABLE)			
Cash Fund name and number:			
Statutory reference to Cash Fund:			
Describe how revenue accrues to the fund:			
Describe any changes in revenue collections that will be necessary to fund this project:			
FY 2020-21 Actual Ending Fund Balance	FY 2021-22 Projected Ending Fund Balance	FY 2021-22 Projected Ending Fund Balance with Project Approval	FY 2022-23 Projected Ending Fund Balance with Project Approval
\$	\$	\$	\$



FY 2023-24 Request Year-IT Capital Request | November 1, 2022]

RY – Department IT Capital Construction Project: [R-02]

Summary of Request	Total Funds	CCF-IT	Cash Funds	Reappropriated Funds	Federal Funds
FY 2022-23	\$4,099,148	\$4,099,148	\$0	\$0	\$0
FY 2023-24	\$4,530,695	\$0	\$4,530,695	\$0	\$0
FY 2024-25	\$4,373,158	\$0	\$4,373,158	\$0	\$0

Categories of IT Capital Projects

System Replacement (costs escalating, failing technology, software or vendor support ended, or new technology, e.g., DRIVES, CHATS)	System Enhancement Regulatory Compliance (new functionality, improved process or functionality, new demand from citizens, regulatory compliance, e.g, CBMS)	Tangible Savings Process Improvement (conscious effort to reduce or avoid costs, improve efficiency, e.g., LEAN, back office automation)	Citizen Demand “The Ways Things Are” (transformative nature of technology, meet the citizens where they are, e.g., pay online, mobile access)
---	---	--	--

Request Summary:

The Department of Public Health and Environment (CDPHE) is seeking Year 2 funding in the amount of \$4,530,695 in cash funds for the Stationary Sources Solution Modernization project. The request is for Year 2 funding for the Department to modernize its outdated (circa 1995) core (SSP) data systems used primarily for stationary source regulatory and management purposes. The General Assembly funded this IT Capital request in FY 2022-23 in the amount of \$4,099,148 in General Funds.

Funding will be used to develop and implement a data system for permitting, inventory, reporting, inspections, compliance and enforcement, billing, and public access to data. The system will also potentially be used for GHG emission tracking and management purposes. This project will create a system that will allow the regulated community to submit environmental regulatory permit applications, compliance- and enforcement-related materials, and other reports online. The new system will reduce processing times by eliminating errors experienced with the existing, manual submission process. This system will allow SSP to process permits, inspections, compliance and enforcement in an exclusively electronic environment. As a result, both the SSP and regulated community will receive time and cost savings with the new online submission and processing system. In addition, the new system will facilitate enhanced reporting of air pollution information, which will be beneficial to state residents and disproportionately impacted communities.

The project is currently still in Phase 1 (of 3 phases) and the Department is engaging in the following activities:

- System design and stakeholder engagement
- Implementation of base system;
- Implementation of the Air Pollutant Emission Notices (APENs) for sources required to report emissions;
- Development of workflow for permitting, inspection and compliance purposes

Project Description:

The SSP interfaces with multiple different customer groups through various regulatory programs. For the most part, SSP permitting, inspection and compliance programs are paper-based and rely on significant amounts of data entry by the SSP staff into the current system. The SSP is proposing to improve the delivery of environmental services to our customers through the construction and operation of a customer focused, integrated and interactive electronic permitting, inspection and compliance system.

The SSP is proposing a web-based system that would allow each regulated entity to interact with SSP via a secure web portal. The system will perform a number of activities, such as application and payment for required permits, upload documents required by regulations or statute, and allowance of each member of the regulated community to update and modify information on file with the SSP. In turn, SSP staff will be able to process requests received from the regulated community via the secure web portal, and can then provide appropriate permits, reports or correspondence back to the regulated entities via the same portal. Furthermore, this system will allow for public access to select (non-Business Confidential) records. This approach will cut down on the number of public requests for records and SSP resources needed for those requests.

The system will allow SSP to process permits, inspections, compliance and enforcement in an exclusively electronic environment. As a result, both the SSP and regulated community will receive time and cost savings with the new online submission and processing system. In addition, the new system will facilitate enhanced reporting of air pollution information, which will be beneficial to state residents and disproportionately impacted communities.

This project is a high priority for the Department because it serves as a foundation to support many of the strategic goals and priorities of the Department. It also aligns with the Departments Strategic Plan - developed in coordination with the Governor Office's Wildly Important Goals - and supports the Governor's Reimagining State Government initiative by enhancing virtual services, and embracing technology solutions to improve organizational efficiency and effectiveness. The project also serves to fill both an important business continuity purpose and ties to broader economic, environmental and social goals. If the system is not implemented, the Department will continue to operate with an outdated and inefficient system that does not meet current standards for information management needs and does not meet expectations from Colorado residents and businesses for ease of usage and access to information.

Background of Problem or Opportunity:

The Department currently operates in a paper-based system that requires manual entry of data. This has created a situation where, even though a number of Lean activities have been put into place, technical staff have dedicated a large portion of their working hours to the performance of administrative duties. The current data solution has become inefficient and burdensome to the mission statement of the SSP. Although tasks have been analyzed through process improvement efforts, the SSP

has come to a point where they cannot see sizable increases in efficiency without a current technological solution.

The Department is seeking to replace its core data systems, primarily for management of stationary sources, including permitting, inventory, reporting, inspections, compliance, enforcement, billing and to improve public access to information. The Department software and data systems are outdated, lack integration with one another, and need to be upgraded to improve organizational effectiveness as well as to support current data management and overall business needs. The core data systems were implemented in 1995 and our resulting business processes are often inefficient and provide limited capacity to be agile and adapt to current customer and business needs.

Furthermore, the Department's Strategic Plan - developed in coordination with the Governor Office's Wildly Important Goals - recognizes the need for greater efficiency and effectiveness in many of the areas of SSP including permitting, compliance and enforcement, inspections, access to records, etc. Additionally, the Department's new work in areas such as greenhouse gas reduction will require greater inventorying of pollutants. This new database will be able to support the new legislative requirements ranging from 19-1261 to several 2021 legislative bills (21-1266, 21-264) to the new Air Quality Transformation goals.

Justification:

The project proposal was reviewed and approved by OIT in July 2021. Review of current system capabilities and limited scoping of potential new systems. All Stationary Source business processes have been mapped out in step-by-step method.

The collection, analysis, and interpretation of environmental data grow more complex each year. In fact, over the past few years, the AQCC has passed a number of new regulations on various industrial sectors, many of which require significant data reporting. Additionally, the Division has added a second mobile air quality monitoring lab, which collects tremendous amounts of data. However, such large volumes of data are difficult to process and, more so, assess to drive future improvements to Colorado air quality, to inform future rulemakings, etc.

Historically, data have been submitted to the Division through various paper forms and, recently, electronically through spreadsheets emailed to the Division. However, as additional regulations are passed, it is recognized that the Division needs a "big data" solution starting with the warehousing of data that allow for proper collection and sharing of data with the public, environmental researchers, NGOs, etc.

To meet broader data management and access needs, it is proposed that the Division contract with a local university or regional organization such as WESTAR to build and maintain a data warehouse for the purpose of collecting, storing, and sharing data with other agencies, the regulated community and the public. The Division maintains an extremely high volume of information, particularly in stationary sources, technical services and the mobile sources teams. However, data storage, management and access issues are challenging and constrained by inadequate storage infrastructure. Since the Division lacks expertise in developing this complex technology tool, it is more efficient to contract with local expertise to develop and maintain such a system.

The collection, analysis, and interpretation of environmental data grow more complex each year. In fact, over the past few years, the AQCC has passed a number of new regulations on various industrial sectors, many of which require significant data reporting. Additionally, the Division has added a second mobile air quality monitoring lab, which collects tremendous amounts of data. However, such large

volumes of data are difficult to process and, more so, assess to drive future improvements to Colorado air quality, to inform future rulemakings, etc.

Through the execution of this project, the SSP anticipates customers will realize the following benefits:

A. Regulated Entity

Greater visibility and timeliness of processing submissions so the customer can track the status of permit and license applications and other requests as they move between process stages. SSP envisions that a new data system will save the regulated community time and resources by providing an all-electronic platform to submit information. With current processes today, it can take several days to move a single “business transaction” through SSP due to excessive handling.

Saving customer time and resources by allowing members of the regulated community to interact with the SSP via a secure web portal to perform various functions including, but not limited to, the following:

1. Apply and pay for required permits and register its facilities electronically;
2. Allow each regulated entity to upload required documentation online including materials related to permitting, compliance and enforcement, routine reporting per State and Federal requirements, etc.;
3. Allow each regulated entity to update and/or modify its information on file with the SSP;
4. Receive notifications from the SSP in the form of inspection reports, deadline reminders and changes to software, processes or regulations.

B. Internal Staff

Improved processes and customer self-directed access to records will result in greater programmatic efficiency and effectiveness, saving staff time and resources, resulting in greater staff capacity to devote to other priorities, which achieve the mission of the organization.

Allow the staff of SSP to:

- Access permit applications and required documentation submitted through the web portal by the regulated community;
- Access compliance and enforcement materials submitted to the SSP;
- Generate required documentation (permits, reports, etc.) based on the submitted applications and documentation; and,
- Manage business processes to comply with regulatory requirements for facilities, permits, inspections and compliance.

An improved SSP data system should also be of benefit to a variety of other state and local agencies including, but not limited to COGCC, CEO, CDOT, Climate Cabinet, local air quality inspection programs, environmental interest groups, universities and to local elected officials. Data in the SSP data system could more easily be queried and captured for decision making as well as provide improved public access to information

Business Process Analysis

A business process analysis has recently been completed by OIT and SSP. Each process has been evaluated for efficiency, workload and priority to all stakeholders.

Cost-Benefit Analysis and Project Alternatives

The SSP will evaluate a number of different alternatives to the proposed approach. Those alternatives, estimated costs, and pros and cons are as follows.

1. Proposed Solution: Implement a single Commercial off the Shelf product (COTS) for all of the SSP's processes. Fund implementation of several processes for each of the next three years at an annual cost of \$4.1M to \$4.4M.
2. Develop a custom solution using vendor resources. The cost of this solution would be determined through a Request for Proposal (RFP) process with potentially a focus on a cloud-based solution.
3. Continue with current paper-based processes. Under this scenario, FTE and fee increases are likely, due to increasing demand in the program. Additionally, the entities regulated under the Stationary Sources Program may soon be required to electronically report to EPA. In the event that the SSP's Stationary Sources Program does not have a system in place to handle electronic reporting from regulated entities, it is likely that the regulated entity would have to report information to both EPA and the SSP separately.

Success Criteria and Improved Performance Outcomes

The customer will be able to track the status of a request as it moves through the regulatory process. The system will immediately identify errors contained in the application for correction, resulting in faster turnaround. Improved processes will result in greater programmatic effectiveness and greater capacity to devote staff time to other work priorities that achieve the mission of the organization. The SSP estimates there are at least 100 processes that could benefit from this type of system. An example of the benefits the SSP could receive is with the Air Pollutant Emission Notice (APEN) receipt process. The SSP receives approximately 11,000 APENs per year. The SSP expects the processing time for each APEN to decrease significantly. The staff hours saved would be directed to maintenance and management of the web-based portal system as well as addressing existing backlogs that the SSP has in other processes.

Assumptions for Calculations

The calculations made are intended to include all expected vendor expenses associated with time and materials needed for development, testing and implementation of the project.

The cost approximations also assume that data storage and maintenance of hardware will be performed by the vendor. The cost of data storage will likely increase as the amount of data created rises. The figures used in this narrative are intended to be an average cost over the life of the project.

	Total Project Costs	Current Request FY 2022-23	Year 2 Request FY 2023-24	Year 3 Request FY 2024-25
Contract Professional Services				
Consultants/Contactors	\$10,332,000	\$3,444,000	\$3,444,000	\$3,444,000
Independent Verification and Validation (IV&V)	\$516,600	\$172,200	\$172,200	\$172,200
Training	\$75,000	\$25,000	\$25,000	\$25,000
Inflation for Professional Services	\$291,296	\$0	\$145,648	\$145,648
Other Services/Costs	\$360,000	\$120,000	\$120,000	\$120,000
<i>Total Professional Services</i>	\$11,574,896	\$3,761,200	\$3,906,848	\$3,906,848
Software Acquisition				
Software COTS	\$392,750	\$42,750	\$150,000	\$200,000
Software Built	\$150,000		\$150,000	
Inflation on Software	\$13,500	\$0	\$8,100	\$5,400
Inflation Percentage Applied			2.70%	2.70%
<i>Total Software</i>	\$556,250	\$42,750	\$308,100	\$205,400
Equipment				
Other - Cloud Hosting	\$300,000	\$100,000	\$100,000	\$100,000
<i>Total Equipment and Miscellaneous Costs</i>	\$300,000	\$100,000	\$100,000	\$100,000
Project Contingency				
5% project contingency	\$621,557	\$195,198	\$215,747	\$210,612
Total Request				
Total Budget Request [A+B+C+D]	\$13,052,703	\$4,099,148	\$4,530,695	\$4,422,860
Source of Funds				
GF	\$ -	\$4,099,148	\$4,530,695	\$ -
CF	\$ -	\$ -	\$ -	\$4,422,860
RF	\$ -	\$ -	\$ -	\$ -
FF	\$ -	\$ -	\$ -	\$ -

ADDITIONAL REQUEST INFORMATION				
Please indicate if three-year roll forward spending authority is required.		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Is this a continuation of a project appropriated in a prior year?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
If this is a continuation project, what is the State Controller Project Number?				
If this request effects another organization, please provide a comfort letter.				
Please attach a letter from OIT indicating review and approval of this project				
CONTINUATION HISTORY (DELETE IF NOT APPLICABLE)				
	FY 2022-23 Appropriated	FY 2023-24 Request	FY 2024-25 Request	Total Appropriations
Total Funds	\$4,099,148	\$4,530,695	\$4,373,158	\$4,099,148

Capital Construction Funds	\$4,099,148	\$4,530,695	\$0	\$4,099,148
Cash Funds	\$0	\$0	\$4,373,158	\$0
Reappropriated Funds	\$0	\$0	\$0	\$0
Federal Funds	\$0	\$0	\$0	\$0
	FY 2022-23	FY 2023-24	FY 2024-25	Total
Amount Spent	\$0			
Amount Encumbered	\$0			
Total Funds Available	\$4,099,148			

ESTIMATED PROJECT TIME TABLE		
Steps to be completed	Start Date	Completion Date
Implementation of Base System		
Implementation of the Air Pollutant Emission Notices (APENs) for sources required to report emissions		
Development of workflow for permitting, inspection and compliance purposes (Phase 2)		
Implementation of thirty simple and ten moderate processes		12/31/2024
Implementation of thirty simple and ten moderate processes		12/31/2025



COLORADO

Department of Labor and Employment

Jared Polis
Governor

Joe Barela
Executive Director

FY 2023-24 Request Year-IT Capital Request | October 1, 2022

Signature
Date

RY – Department IT Capital Construction Project: CC-IT-03 Conveyance Database

Summary of Request	Total Funds	CCF-IT	Cash Funds	Reappropriated Funds	Federal Funds
FY 2023-24	\$693,000	\$0	\$693,000	\$0	\$0
FY 2024-25	\$0	\$0	\$0	\$0	\$0
FY 2025-26	\$0	\$0	\$0	\$0	\$0

Categories of IT Capital Projects

System Replacement (costs escalating, failing technology, software or vendor support ended, or new technology, e.g., DRIVES, CHATS)	System Enhancement Regulatory Compliance (new functionality, improved process or functionality, new demand from citizens, regulatory compliance, e.g., CBMS)	Tangible Savings Process Improvement (conscious effort to reduce or avoid costs, improve efficiency, e.g., LEAN, back office automation)	Citizen Demand “The Ways Things Are” (transformative nature of technology, meet the citizens where they are, e.g., pay online, mobile access)
---	--	--	--

Request Summary:

The Department of Labor and Employment requests a total of \$693,000 in cash fund spending authority in FY 2023-24 for a capital technology project to support the enhancements to the conveyance database system within the Division of Oil & Public Safety. The Division has had a digital conveyance system for about eight years, with the current iteration of the system in place since 2015. The current application is utilized to assist the Division in the regulation and enforcement of conveyance compliance and to track all conveyances in the state.

This request represents a “System Enhancement Regulatory Compliance” category of the IT project. The enhancements to the database will provide reconfiguration and additional integration of applications to ensure accurate information and timely processing.

The Department anticipates the requested funds will cover product planning, system architecture and design, and data interfacing with additional user-facing features and functionality. The Department will modernize the system by implementing a customizable commercial-off-the-shelf (COTS) system that will be able to keep pace with ever-changing technology.

Project Description:

The Department is requesting enhancements to the existing Conveyance Database system, which consists of eliminating the plug-in application from the existing database application and rewriting the code to an updated format; online entry of inspection data from third party inspectors; creating a more robust invoicing status; allowing simple recreation of automated enforcement documents when the customer address is unusable, and; for the networking of the database platform with the licensing ID printer.

The plug-in application component outside of the existing Conveyance Database will be removed, and the existing database will be enhanced to perform basic functionalities that were provided by the plug-in application. These enhancements will reduce disruptions in service to the customers utilizing the database and re-work for staff.

In order for this project to be successful, the Department will integrate business requirements analysis and technical integration services with the State's network where applicable. The vendor will work in conjunction with the Department's Management Information Services team to provide technical support resources, facilitate data extractions and conversion from the current legacy system, and support post go-live vendor relationship and management. This will also assist in providing the support for release management, compliance and governance.

Systems Integration Opportunities

It is anticipated the enhancements to the system will allow for expanded integration of access and update reports that provide information on dormant conveyances often missed in the current system. It will enhance the ability for conveyance reporting functionalities, at large, for the Conveyance program. The system will be able to transfer information seamlessly through software of the existing system rather than an add on.

Risks and Constraints

The Department relies exclusively on cash fund revenue from the Conveyance Cash Fund to support the Conveyance program. The risks associated with this project are minimal considering the Division's other programs are already operating on similar platforms. One of the existing vendors has limited technical staff with the inability to hire more, which may result in a system outage that would not be resolved in a timely manner, leading to serious consequences for conveyance owners, users of the conveyances, and the Division.

Operating Budget Impact

The request is to purchase software that enhances the existing database. After the requested \$693,000 in funding is expended, there will be ongoing licensing costs. These costs will be addressed through existing resources as ongoing licensing costs will likely be reduced in the future as a result of removing the licensing fees currently associated with the plug-in application.

Background of Problem or Opportunity:

The Division of Oil and Public Safety Conveyance program is granted authority to ensure the safety of public conveyances. Currently, there are approximately 22,000 regulated conveyances operating in Colorado. The Division of Oil and Public Safety receives administrative support resources to directly oversee these entities through fees for conveyance registrations, construction permits, conveyance inspection certificates (e.g. elevators and escalators), and professional licensing. In addition, these fees may be used to pay for costs associated with upholding industry standards and ensuring public safety related to conveyances.

The current application is utilized to assist the Division in the regulation and enforcement of conveyance compliance and track all conveyances in the state. The Division currently utilizes a conveyance database system from one vendor with an add-on application from another vendor. This has led to increases in both costs and resources needed to maintain and enhance the system, and has caused disrupted services and issues with payment processing to customers for conveyances. The database is utilized internally by division personnel as well as by 3rd party inspectors; although, further enhancements to the database are necessary to ensure the public facing component of record viewing and inspection entry is more user friendly.

Justification:

The Division of Oil and Public Safety receives administrative support resources to directly oversee these entities through fees for conveyance registrations, construction permits, conveyance inspection certificates (e.g. elevators and escalators), and professional licensing. The request to add functionality to enhance the Conveyance Database system will ensure the Department continues to remain in compliance with statute.

While the current system integrates two systems, one of the existing platforms is limited on technical support, which leads to a lag in resolution to system errors and issues. The end result can have serious consequences for conveyance owners, the end users of those conveyances, and, ultimately, to the Division. By consolidating to one application, it would remove the need for additional add-on application licensing and resources, resulting in an overall increase in system efficiency.

Business Process Analysis

The Department of has been considering this project for over four years. At the beginning of the planning process, the Department did a deep discovery phase to determine the best approach to this type of enhancement. A successful Request for Information was completed in January of 2020, where several vendors responded with information and demonstrations of an agile, scalable, and responsive system for decision makers.

Cost-Benefit Analysis and Project Alternatives (per H.B. 15-1266)

The Department is faced with the option of continuing use of its existing system, which has a current add-on application licensing fee of approximately \$36,000 annually. However, the Department would decrease this license cost to between \$2,000 and \$3,000 annually by only keeping the letter generation element of the application. Functionalities added to the current system would be covered under the current license fees.

Success Criteria and Improved Performance Outcomes

Success of the project will be determined by the following criteria:

- Integrated workflows and process improvement.
- Elimination of licensing costs related to the database.
- Ability to collect and maintain data on conveyances.
- More user friendly online entry of inspection data from third party inspectors.
- Ability to improve invoicing status.
- Ability to automate enforcement documents when the customer address is unusable.
- Networking of the database platform with the licensing ID printer.

Assumptions for Calculations

Through market research, the Department has reviewed prospective solutions and the table below outlines estimated costs.

Item	Expense
Software	\$600,000
Contingency	\$30,000
<i>Future IT Capital Replacement Costs*</i>	<i>\$63,000</i>
Total	\$693,000
<i>*This funding request includes the additional 10% to be set aside for future replacement costs.</i>	

Consequences if not Funded

If the request is not funded, the Department will continue to have process failures within the current database add-on. These failures include, but are not limited to, inaccurate violation notices, payment failures, and integration issues between the application add-on and the database platform. If these failures continue with the current system add-on, neither the vendor nor Department support teams will be able to address client complaints in a timely manner.

Change Management

The change management and overall implementation strategy will use a focus on updating the database to focus on bringing the Conveyance community forward. It is the Department's intent to engage a vendor for the enhancement of the database who has experience in Oil and Public Safety processes.

- **Training:**The selected vendor will be responsible for providing ongoing user and technical support. This includes 24/7 emergency support, limited to an event such as a complete system failure, and standard user and technical support via all appropriate methods during normal business hours.
- **Testing:**These enhancements will provide a new user experience layout fused with familiar navigation concepts, which will require end user training content to be crafted to ensure the value created by the upgrade can be immediately and easily experienced. Additionally, some of the enhanced system support tools will also require training to existing support staff.

Additionally, training will be provided on the new features of the system, with vendor support, to ensure all internal users are familiar with the system. Since other programs within the Division are already using a similar platform, internal knowledge will be leveraged to train all staff in the Conveyance Program.

Alignment with OIT Best Practices and Standards

This request aligns with the Department goals and has been stated as a needed solution in the agencies OIT Five-Year IT Roadmap.

Procurement

The Department is working on the planning and procurement of this request. The procurement process will meet the Colorado Procurement Code requirements for competitive, equitable, and fair purchasing.

Disaster Recovery and Business Continuity

The existing system runs a significant risk of extended response time to all end users if a problem arises. The benefits of the system integration will allow the State to more rapidly respond to ever changing security requirements and threats. All implementations would be compliant with all existing state and federal IT architecture, security and business continuity requirements and guidelines, and State cybersecurity policies set forth by the Office of Information Security.

Accessibility Compliance

Enhancing the database system will offer the ability to address and further enhance Accessibility Compliance requirements not present or capable of being implemented in the current legacy system. The software vendor will maintain the ability to adhere to OIT statutory

obligations regarding Accessibility Compliance and new requirements as required in HB21-1110 for individuals with disabilities.

Impact to IT Common Policy

This request will not have an impact on the IT Common Policy funding, as the Department manages all aspects of the Conveyance Database, including vendor management. It is not anticipated that OIT will be involved in the design, testing or implementation of the system enhancements.

ESTIMATED PROJECT TIME TABLE		
Steps to be completed	Start Date	Completion Date
Implementation of software	7/1/2023	6/30/2024

CASH FUND PROJECTIONS (DELETE IF NOT APPLICABLE)			
Cash Fund name and number:		Conveyance Safety Fund - 13D0	
Statutory reference to Cash Fund:		C.R.S 9-5.5-111	
Describe how revenue accrues to the fund:		Fees are from registration of new conveyances, annual inspections, construction permits, licenses for conveyance inspectors, mechanics and contractors	
Describe any changes in revenue collections that will be necessary to fund this project:		None*	
FY 2019-20 Actual Ending Fund Balance	FY 2020-21 Projected Ending Fund Balance	FY 2021-22 Projected Ending Fund Balance with Project Approval	FY 2022-23 Projected Ending Fund Balance with Project Approval
\$1,396,281	\$1,364,509	\$1,189,072	\$1,008,371

*This fund is currently under cash fund waiver through FY 2022-23.

CC-IT: CAPITAL CONSTRUCTION INFORMATION TECHNOLOGY REQUEST FOR FY 2023-24									
	Department	Labor and Employment			Signature Department Approval:		Date		
	Project Title	Conveyance Database			Signature OIT Approval:		Date		
	Project Year(s):	FY 2023-24			Signature OSPB Approval:		Date		
	Department Priority Number	3							
	Five-Year Roadmap?				Name and e-mail address of preparer:				
Revision? Yes x No If yes, last submission date: _____		Total Project Costs	Total Prior Year Appropriations	Total Request	Year 2 Request	Year 3 Request	Year 4 Request	Year 5 Request	
A. Contract Professional Services									
(1)	OIT Contracted Program Manager	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	
(2)	Quality Assurance	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	
(3)	Independent Verification and Validation	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	
(4)	Training	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
(5)	Leased Space (Temporary)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
(6)	Feasibility Study	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
(7a)	Inflation for Professional Services	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
(7b)	Inflation Percentage Applied		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
(8)	Other Services/Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
(9)	Total Professional Services	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
B. Software Acquisition									
(1)	Software COTS Purchase	\$ 600,000		\$ 600,000					
(2)	Software Built	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
(3a)	Inflation on Software	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
(3b)	Inflation Percentage Applied	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
(4)	Software COTS Purchase Interest	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
(5)	Total Software	\$ 600,000	\$ -	\$ 600,000	\$ -	\$ -	\$ -	\$ -	
C. Equipment									
(1)	Servers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
(2)	PCs, Laptops, Terminals, PDAs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
(3)	Printers, Scanners, Peripherals	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
(4)	Network Equipment/Cabling	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
(5)	Miscellaneous	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
(6)	Total Equipment and Miscellaneous	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
D. Project Contingency									
(1)	5% project contingency	\$ 30,000	\$ -	\$ 30,000	\$ -	\$ -	\$ -	\$ -	
	Future IT Capital Replacement Costs			\$ 63,000					
E. Total Request									
	Total Budget Request [A+B+C+D]	\$ 630,000	\$ -	\$ 693,000	\$ -	\$ -	\$ -	\$ -	
F. Source of Funds									
	GF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
	CF/RF	\$ 693,000	\$ -	\$ 693,000	\$ -	\$ -	\$ -	\$ -	
	FF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	



COLORADO

Department of Labor and Employment

Jared Polis
Governor

Joe Barela
Executive Director

FY 2023-24 Request Year-IT Capital Request | October 1, 2022

Signature
Date

RY – Department IT Capital Construction Project: CC-IT-01 Vocational Rehabilitation Case Management Modernization

Summary of Request	Total Funds	CCF-IT	Cash Funds	Reappropriated Funds	Federal Funds
FY 2023-24	\$4,677,866	\$0	\$0	\$996,386	\$3,681,480
FY 2024-25	\$1,234,465	\$0	\$0	\$262,941	\$ 971,524
FY 2025-26	\$0	\$0	\$0	\$0	\$0

Categories of IT Capital Projects

System Replacement (costs escalating, failing technology, software or vendor support ended, or new technology, e.g., DRIVES, CHATS)	System Enhancement Regulatory Compliance (new functionality, improved process or functionality, new demand from citizens, regulatory compliance, e.g, CBMS)	Tangible Savings Process Improvement (conscious effort to reduce or avoid costs, improve efficiency, e.g., LEAN, back office automation)	Citizen Demand “The Ways Things Are” (transformative nature of technology, meet the citizens where they are, e.g., pay online, mobile access)
---	---	--	--

Request Summary:

The Department of Labor and Employment requests a total of \$5,912,331, with \$1,259,327 in Reappropriated Funds and \$4,653,004 in Federal Fund spending authority for a capital technology project in order to support the implementation of a commercial-off-the-shelf (COTS) Case Management Vocational Rehabilitation System, as a replacement for a legacy case management system (AWARE) that is over 10 years old. The current AWARE system that is used by the Division of Vocational Rehabilitation staff for case management and vendor services is aging and has been substantially the same for more than a decade. Changes that are necessary for the Department to respond to the dynamic environment in which it operates take longer, costs more, and require direct involvement from the vendor.

This request represents a “System Replacement” category of the IT project. The new system will enable staff to efficiently manage all aspects of vocational rehabilitation service administration and tracking, from initial service and assessment through Individual Plan for

Employment (IPE) development and implementation, employment, and post-exit follow-up while meeting all federal and state legal and reporting requirements.

The Department anticipates the requested funds will cover all vendor costs, including product planning; system architecture and design; legacy system data migration; systems integration processes; training and documentation; data interface and development deliverables, and; additional user-facing features and functionality. The outyear costs are approximately the same as the current ongoing costs of the AWARE system and would be covered with existing resources.

A modernized system will also increase access to virtual services and reduce the time to be approved for assistance, allowing Department staff to more attentively serve those in need. Department staff and customers will be able to evaluate service providers more effectively, ensuring the people it serves have access to the providers with more successful outcomes. Self-service portals will streamline vendor registration, reporting, and billing, increasing the quality of our services overall.

Project Description:

The Department is requesting a full replacement of its AWARE legacy case management system used by the Division of Vocational Rehabilitation (DVR) for vocational rehabilitation case management and vendor services. The current system does not have any advantages to address the new digital reality, streamline any processes, or bring real attention to the future of work.

The new system must be able to support approximately 200 concurrent users located in 30 offices statewide to track the life cycle of potentially eligible individuals, applicants, and eligible cases from referral to closure and post-exit data tracking, collecting data for each status, and requiring the completion of Rehabilitation Services Administration mandated reporting elements as the customer's case progresses under all applicable laws and regulations.

Specifically, the Department requires a case management system that meets the following requirements:

- Full online access for the people DVR serves, vendors, and employers, allowing for better sharing, engagement, collaboration and citizen satisfaction.
- More effective, streamlined, and agile processes allowing staff to do more while responding quicker and more cost effectively to the changing regulatory environment and citizen needs.
- Improved data availability to evaluate and correlate services provided, vendor costs, and average cost per case to positive employment outcomes to drive better outcomes for the people DVR serves.

- New system that is capable of running on any browser and device to enable mobility and better communication with the people DVR serves, vendors, and employers.
- Considerable time savings and flexibility in configuration and the update release process to save staff time while meeting needs faster.
- Consistent with Department goals, extensible, and promotes the Department's vision in the new digital reality with well capitalized vendors who are investing in vocational rehabilitation and other health and human service government solutions for a more promising future for the citizens we serve.

In order for this project to be successful, the Department will require cooperation with the Governor's Office of Information Technology (OIT) to help implement the new software. OIT will provide supportive project management, business requirements analysis, and technical integration services with the State's network where applicable. The vendor will work in conjunction with the Department's Business Technology Group to develop a system with a foundation of human-centered design and provide resources to support technical needs, facilitate data extractions and conversion from the current legacy system, and support post go-live in vendor relationship and management in addition to release management and compliance and governance.

Systems Integration Opportunities

It is anticipated the new system will provide tools for vocational rehabilitation counselors to manage each customer's case, such as to-do reminders, case notes, vendor management, communication, and budgeting, and will also include options for important vendor and client portals. The system would enable document retention and data integration with other existing systems, such as AdobeSign and Box via application programming interface (API) and other methods, and will allow Department staff to make configuration changes to its benefit.

Additionally, the Department's request for proposal (RFP) for a new case management system also requires the new system to interface with the following:

- The state of Colorado's accounting system.
- Directly with databases maintained by the Department and Workforce programs for wage information and unemployment claims.
- Referral/application forms established by other Workforce Innovation and Opportunity Act (WIOA) Programs for the purposes of common intake.
- Optional ability to interface with the Social Security Administration's Ticket to Work program to automatically send and receive reimbursements.
- Ticket Tracker software.
- Allow case note emails to be sent.
- Allow for configuration and establishment of export files for the State Wage Interchange System (SWIS), State Verification and Exchange System (SVES), Colorado Department of

Higher Education (CDHE), Colorado Department of Education (CDE), and Colorado Department of Labor and Employment (CDLE), among others.

Risks and Constraints

The Department relies almost exclusively on grant funding for vocational rehabilitation services that includes a 78.7 percent federal match to the state 21.3 percent non-federal contribution. The appropriation of funds from the legislature to allow the Department to finance this enhanced system will also maximize its existing federal grant funds on direct programming for the communities of Colorado. The risks associated with this project revolve around the potential failure of the current aging legacy system. The likelihood of this has increased recently as the technology continues to age out of its useful life.

Operating Budget Impact

The request is for the purchase and installation of a new COTS case management system. After the requested \$5,912,331 in funding has been fully expended, there will be approximately \$600,000 annually for ongoing maintenance and cloud-based hosting, which is comparable to the existing case management system if it were maintained, can be covered within existing resources.

Background of Problem or Opportunity:

The Colorado Department of Labor and Employment's Division of Vocational Rehabilitation (DVR) strives to promote a thriving employment environment with opportunity for every Coloradan with a disability to live independently and prosper. DVR provides a variety of employment related services to meet the needs of students with disabilities and eligible individuals with disabilities. This includes training and career-preparation programs to assist individuals with disabilities in reaching their employment goals.

DVR uses the current case management system to record the case progression of individuals participating in multiple programs, such as vocational rehabilitation and potentially eligible Students with Disabilities, and supports its Counselors using the system, while using Managed Vendor Services for hosting and updates to meet changing grant requirements. The system adheres to federal and state policies and procedures that change frequently, and handles nearly all federal and state grant reporting requirements and modifications, which is a needed requirement.

The case management system is a vendor-managed Software-as-a-Service (SaaS) system architected more than a decade ago and was first implemented in Colorado in 2011. The current system is aging and has been substantially the same since implementation. Changes necessary for DVR to respond to the dynamic environment in which it operates require direct involvement from the vendor and are both costly and slow. DVR's current system does not allow for online collaboration and does not work on mobile devices. While it meets minimum federal grant reporting requirements, it does not support efficient business processes or collaboration

between DVR, providers, partners, or people with disabilities receiving services from DVR. DVR needs a current, cloud based platform that is easily configured, maintained, enhanced, and able to respond to the ever-changing WIOA environment.

While DVR's current vendor has led the market for years and was considered a sole source provider in the past, new vendors have entered the market. Newer products have introduced the opportunity for person-centric, flexible, and compliant solutions that streamline processes, take advantage of self-service portals, and measure results for continuous improvement.

Justification:

The Department is required to provide services that benefit people with disabilities. The current case management system has no online collaboration or sharing capabilities for the Department to operate effectively and take advantage of the new digital reality. The Department is eager to explore the technology options for achieving these goals. The Department expects a new case management system will result in significant time savings for staff and will improve business processes by having a system that allows for more streamlined navigation and faster technology. Once implemented, the Department anticipates a modernized case management system could result in significant savings through a reduction in the staff time required to complete critical functions.

A modernized case management system will increase access to virtual services and drive down the time to be approved for assistance, allowing Division staff to more attentively serve those in need and be able to evaluate service providers more effectively and with more successful outcomes. Additionally, self-service portals will streamline vendor registration, reporting, and billing, increasing the quality of its services overall.

Business Process Analysis

The Department has been considering this IT project for over two years. The Division continues to become more community-based, responsive, collaborative, and is working to increase successful outcomes resulting in the inclusion of those with disabilities in the new digital reality at higher wages.

Currently, changes necessary for the Department to respond to the dynamic environment in which it operates take longer, costs more and require direct involvement from the vendor. Making it difficult to implement in a reasonable and timely manner given today's software standards and business needs. The current AWARE system has no online collaboration or sharing, nor does it work on mobile devices used by many for daily interactions. In short, although the current system meets minimum federal grant reporting requirements, its processes are cumbersome and it does not help those partnering with the Department, including the people it serves, service providers, and employers.

The Department's current vendor has led the market for years and was considered a sole source provider in the past. However, new and well-capitalized competitors with real vocational rehabilitation experience and modern, state-of-the-art systems, are emerging in the market and are now available to help the Department accomplish its mission, while navigating the complicated and ever-changing WIOA and RSA requirements. These new vendors focus on person-centric, flexible, and compliant solutions that streamline processes, take advantage of self-service portals, and measure results for continuous improvement. These solutions are based on vocational rehabilitation knowledge and enable the best person-centered workflows developed to meet the demands of vocational rehabilitation, while being highly configurable and continually enhanced on a regular cadence. These solutions meet the Department's goals of providing exceptional virtual services for its citizens, promoting processes and policies that help employers thrive, ensuring the Department is prepared for the future of work, and is inclusive of those with disabilities.

Cost-Benefit Analysis and Project Alternatives (per H.B. 15-1266)

The Department is faced with the options of continuing with its current vendor managed service that is costly and no longer meeting the needs of the Department and those it serves, or selecting a new vendor to provide a modernized case management system that will allow the Department to successfully and more efficiently meet its mission.

The Department's contract with the vendor of its current case management system runs through June 30, 2024. License and hosting fees for the current solution are \$498,418 in FY 2022-23, increasing to \$523,339 in FY 2023-24. Additionally, the Department allocates \$150,000 annually for costly custom work that would seem routine and configurable in most systems, but is not possible in the current aging system laden with technical debt that causes the Department to conduct weeks worth of additional testing when software updates are released. Rates for custom work are also exorbitant by current market conditions for software consulting:

Role Classification	Hourly Rates	
	Offsite	Onsite
Project Manager	\$329	\$478
Senior Technical Specialist	\$266	\$361
Technical Specialist	\$239	\$318

In comparison, consulting services for one alternate provider under National Association of State Procurement Officials (NASPO) listings are \$187 per hour. The five-year cost estimate for renewal of the current aging system is expected to be approximately \$3.3 million without any advantages to address the new digital reality, streamline any process, or bring real attention to the future of work.

The likely estimate of a five-year contract for a new solution will range in the area of \$600,000 to \$650,000 annually for license fees and support depending on the number of licenses, products, and programs that will be enabled. This is similar to the Department's current total spend for licenses and services. Therefore, ongoing fees are expected to be comparable across the Department's existing case management system or transitioning to a new modernized system.

The requests includes the utilization of reappropriated funds to minimize the need for additional General Fund and meet the vocational rehabilitation services grant requirements that include a 78.7 percent federal match to the state's 21.3 percent non-federal contribution, and the Department expects to

Based on the scope of this technology project, the Department and OIT will request additional staff resources, as follows:

Position	FTE	Months	Annual Costs*
OIT: Interface Developer (IT Professional)	1.0	12	\$100,548
OIT: Database Developer (IT Professional)	1.0	18-24	\$100,548
OIT: Technical Business Analyst (Analyst III)	1.0	18-24	\$93,690
OIT: Data Analyst (Analyst III)	1.0	18-24	\$93,690
OIT: Operational Change Manager (IT Professional)	1.0	18-24	\$100,548
OIT: Product Architect (IT Professional)	0.5	18-24	\$57,137
OIT: Project Manager (IT Professional)	1.0	18-24	\$100,548
DVR: Business Analyst (Analyst III)	1.0	18-24	\$93,690
DVR: Operation Change Manager (Administrator IV)	1.0	18-24	\$111,092
DVR: Project Manager (Analyst V)	1.0	18-24	\$133,522
Total	9.5		\$985,013
<i>*Costs include fully loaded Personal Services with benefits and operating costs for FY 2023-24. FY 2024-25 will be reduced due to one-time operating costs required for new FTE.</i>			

The Department expects a new case management system will result in significant time savings for its staff by improving business processes with a system that allows for more streamlined navigation and faster technology. The Department anticipates a modernized case management could result in a savings of as much as \$2 million annually in staff time. This is a real impact that will be put back into vocational rehabilitation program to provide better contact, engagement, and service for more citizens who need it. It is expected that redirecting staff effort away from inefficiencies within the current case management system will lead to increased successful employment outcomes, higher earnings for these individuals, and more people with disabilities being included in the workforce.

Success Criteria and Improved Performance Outcomes

Success of this project will be determined based on the following criteria:

- Ability to properly track and report key performance metrics as mandated by the federal requirements.
- Ability to interface with outside software.
- Ability to update in order to be compatible with emerging technologies.
- Ability to track eligible cases from referral to closure and post-exit.
- Ability to collect data on the status of each case.
- Ability to have person-centric Vendor and Client portals.
- Ability to have document retention and data integration with other existing systems.
- Ability to easily configure to the release of DVR and WIOA changing standards on a regular cadence with product roadmap transparency.

Assumptions for Calculations

Through market research and discussions with the Governor's Office of Information Technology (OIT), the Department has reviewed prospective solutions and the table below outlines estimated costs.

Item	Expense	Description
OIT/IA Project Management	\$1,192,870	Interagency agreement
DVR Project Management	\$676,608	DVR staff to integrate new system
Software COTS Purchase	\$700,000	FY 2023-24 and FY 2024-25
Software Build	\$1,629,052	Design Phases
Other Services/Costs	\$1,086,035	Delivery Testing and Training
Contingency	\$202,505	5%
<i>Future IT Capital Replacement Costs*</i>	<i>\$425,261</i>	
Total	\$5,912,331	
\$600,000 Maintenance & Operations not included in the request, as the Department is able to cover these costs within existing resources.		
*This funding request includes the additional 10% to be set aside for future replacement costs.		

Consequences if not Funded

If the request is not funded, the Department will not be able to meet its goals of providing exceptional virtual services for its citizens, promoting processes and policies that help employers thrive, ensuring the Department is prepared for the future of work, and those with disabilities are included in that future. Specifically, the Office of the State Controller has

indicated it will not approve another sole source contract with the Department's current vendor, as the current contract has been in place for over 10 years without a competitive solicitation. The Department's services to citizens will also suffer and retention will continue to be negatively impacted due to the challenges with the current system. Counselors currently spend significant portions of their time documenting critical case functions within the AWARE system, decreasing the time they have available to work with the people they serve. In addition, the people the Department serves can't apply directly to the system and vendors are unable to access the system for streamlined submission of reports and invoices. Further, AWARE has limited ability to interface with the state's accounting system, complicating the Department's ability to encumber and expend funds for vocational rehabilitation services, while still ensuring mandatory federal reporting is accurate and submitted timely. All of these functions require manual entry and duplication of efforts. Another risk of continuing to use the current AWARE system is the lack of a technology roadmap, making it exceptionally difficult for the Department to anticipate system changes and proactively plan for the future. AWARE is not agile since it operates on old architecture without a plan in place for the system to become more efficient. There is increasing technical debt within this system, making it more difficult and costly to maintain.

Failing to act will result in declining success, mediocre results, and leave the Department exposed to a vendor not committed to the future and unable to respond to the demands of the new world or any emergency. Embracing the future of work with a system developed with the new digital reality in mind is the path to success for the Department and the many citizens it helps to secure employment, prosper, and lead an independent life.

Change Management

The change management and overall implementation strategy as outlined in the Department's RFP for the new case management system will include:

- **Implementation Requirements:** Within two weeks of contract award, the awarded vendor must schedule and set up a series of kickoff meetings with the Department. In addition, implementation of the new system must include: initial system design and configuration, and the creation of maintenance files to support the system; any requirements for workflow mapping; installation of all required hardware and software; building and testing of all required interfaces and data and reporting conversion plan; coordination of the implementation with the Department, and; a plan by which the system will Go-Live no later than the date mutually agreed.
- **Training:** The selected vendor will be responsible for providing ongoing user and technical support, via all appropriate methods, to DVR staff beginning at the time of Go-Live and continuing for the life of the contract. This includes 24/7 emergency support limited to an event such as a complete system failure; standard user and technical support via all appropriate methods during normal business hours; properly

trained user and technical support staff in sufficient quantities to support DVR, and; an effective shared support system so that both the selected vendor and the State are using the same or integrated system to eliminate redundant entry and promote efficient resolution per Service Level Agreement (SLA) requirements.

- **Agile Updates:** Agile updates to the State's designee must be provided at a biweekly minimum from the start of the contract through the implementation phase. Project status reports shall include at a minimum: significant work plan activities performed during the reporting period; review of the completed activities and a comparison to the project plan; identification of project risks and document recommendations to mitigate such risks; deliverables completed during the reporting period; identification of milestones reached and a comparison to the project plan; significant work plan activities planned for the next reporting period; deliverables expected to be completed in the next reporting period, and; identification of problems and/or issues and methods to track the status of current problems and/or issues.
- **Testing:** The testing plan must address all forms of testing and at a minimum will include functional testing, user acceptance testing, final acceptance testing, and a process where the vendor selected will obtain the sign-off upon completion of each stage of testing. Testing requirements also state that acceptance testing must occur prior to Go-Live to allow for the State to confirm the system adheres to all contractual requirements. During testing, the system must also perform successfully under all normal operational conditions; all defects must be resolved prior to Go Live; the selected vendor and the State must mutually agree on the definitions of Severity Level 1 and 2 defects within 30 days of contract award; the selected vendor must submit a plan to address and fix all Severity Level 1 and 2 deficiencies within five days of identification, and; the selected vendor must provide a test report to the State's contract representative within 15 business days of completion of each phase of testing.

Alignment with OIT Best Practices and Standards

The Department will align with OIT best practices by developing a cloud-based managed services solution that meets OIT long term objectives for more virtual services that engage citizens in the most effective and efficient manner possible. The data provided by the new case management system will also inform the Department on how to meet its mission.

This request also aligns with the Department goal of expanding virtual access to government services anytime and anywhere since its new case management system will have a Client Portal option and be responsive in design, allowing the people DVR serves to complete applications and view, upload, and download case documents relevant to their case while being extensible for future requirements in a digitally inclusive world.

Procurement

The Department, in partnership with OIT, is working on the planning and procurement components of this request. The procurement process will meet the Colorado Procurement Code requirements for competitive, equitable, and fair purchasing.

The procurement process will utilize a competitive solicitation and contract negotiation in order to ensure completion of the project within a specific timeline, deliverables, and payment milestones to the greatest benefit of the state.

Disaster Recovery and Business Continuity

The Department has developed disaster recovery requirements in its RFP detailing that the new case management system must include backup and recovery procedures that will allow recovery of the system and all data up to the moment of the disaster and successfully resume functioning within four hours of any disaster. These requirements also outline that the final plan must include objectives, what situations are covered under the plan, technical considerations, system failover plans, roles and responsibilities, how and when to notify the State Contract Representative, recovery procedures, and procedures for deactivating the Disaster Recovery Plan. In addition, disaster recovery requirements in the RFP also outline procedures for automatically backing up data, annual testing, and that the proposed system must meet National Institute of Standards and Technology (NIST) standards for disaster recovery and contingency planning and have a current SOCII report available at all times.

The Department has also factored a business continuity plan in its RFP that requires the new system to backup and completely restore key system data files with common backup media readable by readily available hardware. This business continuity plan also specifies that the vendor must maintain a daily data backup schedule reflecting each day's processed information and that the system shall maintain seven years of backups for all historical datasets post migration.

Accessibility Compliance

A new case management system will offer the ability to address and further enhance accessibility compliance requirements that are not present or capable of being implemented in the current legacy system. Specifically, the current system does not allow for online collaboration and does not work on mobile devices. The software vendor will maintain the ability to adhere to OIT statutory obligations regarding accessibility compliance and new requirements as required in HB21-1110 for individuals with disabilities. The Department maintains that a new case management system will allow it to embrace and provide more effective virtual services so more people with disabilities secure employment faster and are included in the new digital reality at higher wages.

Impact to IT Common Policy

This request will not have an impact on the OIT Common Policy funding since the Department manages all aspects of the DVR Case Management system, including vendor management.

ADDITIONAL REQUEST INFORMATION	
Please indicate if three-year roll forward spending authority is required.	X Yes <input type="checkbox"/> No
Is this a continuation of a project appropriated in a prior year?	<input type="checkbox"/> Yes X No
If this is a continuation project, what is the State Controller Project Number?	No
If this request affects another organization, please provide a comfort letter.	Not Applicable
Please attach a letter from OIT indicating review and approval of this project	

ESTIMATED PROJECT TIME TABLE		
Steps to be completed	Start Date	Completion Date
Project Planning with OIT, Selected Vendor and DVR	July 1, 2023	August 15, 2023
Design Phase re Data Conversion, Interfaces, Reports and APIs	August 15, 2023	May 1, 2024
Design Phase re Counselor, Vendor, and Citizen and Portals	November 1, 2023	May 1, 2024
Delivery, Testing and Training	May 1, 2024	November 1, 2024
Training and Go Live	November 1, 2024	January 19, 2024

	Department	Labor and Employment		Signature Department Approval:		Date		
	Project Title	DVR Case Management System		Signature OIT Approval:		Date		
	Project Year(s):	FY 2023-24 and FY 2024-25		Signature OSPB Approval:		Megan Davisson Date		
	Department Priority Number	1						
	Five-Year Roadmap?			Name and e-mail address of preparer:		Jeanni Stefanik jeanni.stefanik@state.co.us		
Revision? Yes x No If yes, last submission date: _____		Total Project Costs	Total Prior Year Appropriations	Year 1 Request	Year 2 Request	Year 3 Request	Year 4 Request	Year 5 Request
A. Contract Professional Services								
(1)	OIT Contracted Program Manager	\$ 1,192,870	\$ -	\$ 646,709	\$ 546,161	\$ -	\$ -	\$ -
(2)	Quality Assurance	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -
(3)	Independent Verification and Validation	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -
(4)	Training	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(5)	Leased Space (Temporary)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(6)	Feasibility Study	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(7a)	Inflation for Professional Services	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(7b)	Inflation Percentage Applied		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(8)	Other Services/Costs	\$ 1,762,643	\$ -	\$ 1,424,339	\$ 338,304	\$ -	\$ -	\$ -
(9)	Total Professional Services	\$ 2,955,513	\$ -	\$ 2,071,048	\$ 884,465	\$ -	\$ -	\$ -
B. Software Acquisition								
(1)	Software COTS Purchase	\$ 700,000		\$ 350,000	\$ 350,000			
(2)	Software Built	\$ 1,629,052	\$ -	\$ 1,629,052	\$ -	\$ -	\$ -	\$ -
(3a)	Inflation on Software	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(3b)	Inflation Percentage Applied	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(4)	Software COTS Purchase Interest	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -
(5)	Total Software	\$ 2,329,052	\$ -	\$ 1,979,052	\$ 350,000	\$ -	\$ -	\$ -
C. Equipment								
(1)	Servers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(2)	PCs, Laptops, Terminals, PDAs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(3)	Printers, Scanners, Peripherals	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(4)	Network Equipment/Cabling	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(5)	Miscellaneous	\$ -	\$ -	\$ -		\$ -		\$ -
(6)	Total Equipment and Miscellaneous Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
D. Project Contingency								
(1)	5% project contingency	\$ 202,505	\$ -	\$ 202,505	\$ -	\$ -	\$ -	\$ -
E. Total Request								
	Total Budget Request [A+B+C+D]	\$ 5,487,070	\$ -	\$ 4,252,605	\$ 1,234,465	\$ -	\$ -	\$ -
	Future IT Capital Replacement Costs	\$ 425,261		\$ 425,261				
F. Source of Funds								
	GF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	CF/RF	\$ 1,259,327	\$ -	\$ 996,386	\$ 262,941	\$ -	\$ -	\$ -
	FF	\$ 4,653,004	\$ -	\$ 3,681,480	\$ 971,524	\$ -	\$ -	\$ -



COLORADO

Department of Corrections

Jared Polis
Governor

Dean Williams
Executive Director

FY 2022-23 Request Year-IT Capital Request | November 1, 2022

Signature
Date

RY 2023-24– Department IT Capital Construction Project HRMES: CC-02-IT

Summary of Request	Total Funds	CCF-IT	Cash Funds	Reappropriated Funds	Federal Funds
FY 2023-24	\$2,605,416	\$2,605,416	\$	\$	\$
FY 2024-25	\$	\$	\$	\$	\$
FY 2025-26	\$	\$	\$	\$	\$

Categories of IT Capital Projects

System Replacement (costs escalating, failing technology, software or vendor support ended, or new technology, e.g., DRIVES, CHATS)	System Enhancement Regulatory Compliance (new functionality, improved process or functionality, new demand from citizens, regulatory compliance, e.g., CBMS)	Tangible Savings Process Improvement (conscious effort to reduce or avoid costs, improve efficiency, e.g., LEAN, back office automation)	Citizen Demand “The Ways Things Are” (transformative nature of technology, meet the citizens where they are, e.g., pay online, mobile access)
---	--	--	---

Request Summary:

The Department of Corrections (DOC) requests 5.5 FTE and \$2,605,507 Information Technology Capital Construction Funds (CCF-IT) in FY 2023-24 to modernize the DOC Human Resources Management System (HRMES) for a system replacement. This request includes the components necessary to implement a web-based system, software licenses, professional services, training, change management, hosting, project management, and additional FTE support. Through this request, the Department, in collaboration with the Governor’s Office of Information Technology (OIT), seeks approval from the Joint Technology and Joint Budget Committees to implement a modernization project that will replace the current DOC Human Resources Management System with a highly automated and functional HR management solution. If not funded, DOC will

continue to utilize a legacy system built on an outdated platform that puts the Department at risk of data loss, privacy violations, and significant expense to resolve system errors using third party contractors.

This request aligns with the Governor's Wildly Important Goals (WIGs) and the mission and vision of the department; recruiting and retaining top talent is vital to the effective operation of the Department. Successful completion of this goal will lead to a more efficient and highly skilled workforce, in addition to driving down the high costs associated with recruiting, training, and turnover.

Project Description:

The Department requests a system replacement and assumes customizable off-the-shelf (COTS) software available from Kronos will be utilized to meet this requirement. COTS software will need to be tailored for the Department's specific human resource requirements, triggering one-time costs for custom programming. The Department prefers that the software be hosted in the cloud to eliminate the need for maintaining servers on its premises. This setup will allow department employees to utilize a full range of electronic means to access the systems, such as mobile applications, kiosks/timekeeping stations, and personal computers.

With the utilization of COTS software, it is expected that the project implementation will be completed within one year of project approval. Ongoing funding will be determined and requested in a subsequent decision item. The Department has invested significant time in developing the needed configurations for HRMES prior to the State-wide system being canceled. Based on the work that already exists, the timeline for implementing the Kronos Dimension HRMS solution is much shorter. The project timeline involves planning, assessing, building, testing, and certifying phases, lasting approximately nine months. The deployment phase, including end user training, is expected to take three months. The training for end users is expected to overlap with final testing and certification of the systems.

Success criteria for this implementation is leveraging an automated (non-paper/manual) system that reduces the need for significant human intervention. Changes to HRMES is costly and time consuming. It becomes increasingly difficult to find technical staff to work on an obscure legacy system. Newer, more modern software provides best-in-class functionality at the onset of implementation and is highly configurable.

Kronos will deliver the integrations listed below using the Dell Boomi Workforce Dimensions Integration Platform. Interfaces are scheduled via Workforce Dimensions and transferred to the Workforce Dimensions secure FTP (SFTP) environment.

- **Business Data Automation:** Kronos provides the ability to keep the Workforce Management systems' business structure updated as the business organization changes to support new business goals, reorganizations, new locations, acquisitions, divestitures, etc. Business Data Automation includes recurring and fully automated integrations to help eliminate costly and time-consuming manual entries. Integration includes automation of: Labor Categories, Labor Category Lists, Labor Category Profiles, Organizational Sets, Employee Groups, Business Structure, and Employee Data.

- **Product Link Standard Integration:** Integrations listed in this section are considered core products and to satisfy predefined use-cases or Kronos to Kronos productized integration. Kronos Workforce and Dimensions/TeleStaff Link.
- **Flat-File Integration Templates:** Integrations listed in this section are delivered via encrypted flat-file via Kronos Secure FTP site and processed as a scheduled event. Payroll Export, Accrual Balance Export, and Accrual Reset Import. Kronos will deliver the scope of this project utilizing a blended approach. A blended approach combines onsite and remote resources.

The Kronos onboarding process is driven by value and enabling business outcomes. This approach, focused on accelerated time to value, uses tools and techniques, such as industry and region-specific configuration, Kronos process recommendations, dynamic documentation, and accelerated testing processes. All project information is available online, providing project team members access to project status, contact information, issues log, test case tracking, and training plan, 24/7.

- **Systems Integration Opportunities** - The proposed project would build on the analysis work that was performed during the creation of the existing HRMES system. Changes to that analysis are intended to be minimal. Kronos HRMES would integrate into the current Colorado Payroll Personnel System (CPPS) for payroll and streamline the Department payroll process with improved efficiency.
- **Risks and Constraints** - Risks are associated with the history of projects being canceled such as with HRWorks. The risk is mitigated with a full commitment to continuing this project without cancellation. The Kronos solution is tried and proven worldwide in over 50,000 successful implementations so the risk of failure is minimal. Project management risk is reduced by strong DOC executive staff support, including dedicated personnel to oversee successful implementation. The project will be managed and directed by DOC's Business Innovation Group that has staff to act on the Department's behalf to reduce project risk.

Additionally, automated HR systems will allow staff to have real-time visibility on hours worked, leave balances, compensation, overtime hours, personal information, and other vital data. The automated systems will also increase productivity across the Department by streamlining the timekeeping and scheduling processes, recruiting, onboarding, performance management, and other features, thereby providing more time for employees to focus on their primary duties.

Kronos delivers solutions based on departmental needs and requirements that HRMES currently supports. Types of services that will replace the current HRMES system:

- Pro People Center
- Talent Acquisition
- Talent Management
- Compensation
- Learning
- Employee Voice
- Document Management

- People Assist

If approved, DOC will adopt a modern HR system that automates many processes that are currently manual and negatively impacting departmental productivity. The department will benefit from numerous cost-reducing processes and gain leading edge HR recruiting and onboarding resources and tools to address staffing shortages that warrant comprehensive corrective actions that are supported by high-impact resources.

Background of Problem or Opportunity:

The Department currently uses HRMES for its human resources needs. HRMES is a home-grown system that was created to replace a traditional paper-based system. Although the system has provided adequate HR function support, it is highly manual, requiring significant human intervention, and becomes increasingly obsolete given the industry-leading alternatives that exceed HRMES outdated functionality. In short, HRMES is a legacy system built on an outdated platform that puts the Department at risk of data loss, privacy violations, and significant expense to resolve system errors or prevent data loss using third party contractors. HRMES also fuels immeasurable productivity and opportunity costs.

OIT previously initiated the effort to modernize timekeeping and human resources functions across the executive branch with the submission of a \$16 million FY 2014-15 capital construction request. This project initially awarded the timekeeping solution to Kronos, which led to the Department's partnership with Kronos in determining the required configurations to implement this timekeeping and human resources system. The Department was preparing to begin training and put Kronos into production in FY 2017-18 when the HRWorks project managers decided to halt the implementation of Kronos and use a different vendor for timekeeping and human resources. The subsequent ending of the HRWorks project on May 19, 2020 eliminated the expected modernization of the Department's HR system and extended the Department's reliance on using antiquated solutions for this purpose.

Justification:

The Department needs to move away from legacy HR management systems and processes to leverage the exponential benefits of modern HR systems, especially given the crippling staffing shortage that jeopardizes the Departmental mission readiness. Automation of human resource processes will improve efficiency, reduce direct labor interaction, and improve data accuracy and availability.

- **Business Process Analysis** - The Department currently uses HRMES for its human resources needs. HRMES is a home-grown system that was created to replace a traditional paper-based system. Although the system has provided adequate HR function support, it is highly manual, requiring significant human intervention, and becomes increasingly obsolete given the industry-leading alternatives that exceed HRMES outdated functionality. In short, HRMES is a legacy system built on an outdated platform that puts the Department at risk of data loss, privacy violations, and significant expense to resolve system errors or prevent data loss using third party contractors. HRMES also fuels immeasurable productivity and opportunity costs.

- **Cost-Benefit Analysis and Project Alternatives (per H.B. 15-1266)** - The Department could continue to operate on the current HRMES platform while maintaining the growing list of patches to ensure functionality stays true. This option is most costly requiring highly specialized personnel specific in maintaining the home-grown system. The HRMES replacement would significantly improve operations within the department through highly-automated solutions and functions not currently available within our HRMES system. If not approved, the many benefits otherwise achieved, including more effective recruiting and onboarding tools, are abandoned in favor of legacy systems amidst a staffing crisis that should be confronted with every resource. The perceived savings from not funding the request will be eclipsed by the ongoing silent costs of high turnover, lost productivity, and lost institutional knowledge. A budgetary estimate was completed by the Kronos Workforce Solutions team to include scope, approach, costs, and how the project will be managed. The cost-benefit analysis shows strength in return on investment and total costs of ownership which aligns with the project assumptions and calculations.

The Department issued previous RFIs to Kronos regarding Timekeeping & Scheduling systems solutions in 2014. Formal market research includes information from other state agencies using Kronos solutions and previous Departmental requests for Kronos integration and implementation outlining the needs of our agency.

- **Success Criteria and Improved Performance Outcomes** - Success Criteria for this implementation is leveraging an automated (non-paper/manual) system that reduces the need for significant human intervention. Changes to HRMES is costly and time consuming and it is becoming more difficult to find technical staff to work on programming efforts. Newer, more modern software has the best in class available at the onset of the implementation and is highly configurable for reduced and no cost options for change requests. Automated HR systems will allow staff to have real-time visibility on hours worked, leave balances, compensation, overtime hours, personal information, and other vital data which is currently pulled by manual reporting. The automated systems will also increase productivity across the Department by streamlining the timekeeping and scheduling processes, recruiting, onboarding, performance management, and other features, thereby providing more time for employees to focus on their primary duties.
- **Assumptions for Calculations** - A budgetary estimate was completed by the Kronos Workforce Solutions team to include scope, approach, costs, and how the project will be managed. The total estimated cost includes educational training, professional services, project management, implementation operation costs, maintenance and related expenses.

Assumptions are that the vendor costs are accurate and the vendor performs the “heavy lifting” project work leaving only the need for the Department stakeholder cost of training and implementation already covered in the current operations budget. Additional FTE will be factored into the project calculations for support staff to engage with the vendor in various implementation stages. Additional FTE are needed based on

employee shortages resulting in less technical support in specialized Human Resources, IT, Testing, and Training positions.

Total FY 2023-24 Estimate = \$2,605,416

Annual SaaS Fees for 6,250 Licenses = \$1,045,500

Professional Services = \$835,440

Additional FTE = \$724,476

This request is strictly for the implementation phase and subsequent funding for ongoing software fees, equipment fees, and supporting FTE will be requested in future budget requests.

The costs for the requested FTE are based on the following assumptions:

- Starting salaries for each position were calculated using the FY 2022-23 Compensation Plan from the Department of Personnel and Administration.
- IT Professionals are started at midrange because of recruitment issues and competition with other employers for this type of specialty.
- PERA was calculated at 11.5% of salary for both fiscal years.
- Medicare was calculated at 1.45% salary for both fiscal years.
- Health, Life, and Dental was calculated at \$14,086 for both fiscal years.
- Short-Term Disability was calculated at 0.16% for both fiscal years.
- Amortization Equalization Disbursement (AED) was calculated at 5.0% for both fiscal years.
- Supplemental Amortization Equalization Disbursement (SAED) was calculated at 5.0% for both fiscal years.
- Family Medical Leave Insurance (FAMLI) was calculated at 0.45% for both fiscal years.
- Positions are temporary and will be working from home. The Human Resource Specialist III will be for a period of 2 years starting July 1, 2023. The remaining positions will be for a period of 1 year starting July 1, 2023.

In addition to the above assumptions for personal services, the department also has other operating and start-up expenses above and beyond those outlined in common policy guidelines, to include:

- \$2,050 per FTE start-up for per diem expenses for attending the DOC training academy
- Cell phone ongoing costs will be \$115 per year and replace desk phone costs of \$450 per year.

FTE Summary Table	FTE Category #1
-------------------	-----------------

Total FTE	5.5
Total Salary Cost (includes salary, Medicare, PERA)	\$545,981
Total Centrally Appropriated Costs (includes HLD, AED, SAED, STD)	\$149,890
Total One-time Operating Costs	\$24,300
Total Ongoing Operating Costs	\$4,305
Total Costs	\$724,476

The impact of this solution on other agencies is only positive as it will align with the agencies that are already using this solution or are in the process of implementing this solution.

Assumptions and Calculations Summary Table					
	FY 2022-23 Appropriation	FY 2023-24 Request	Change	FY 2024-25 Request	Ongoing Costs past FY 2024-25?
Total Funds	\$0	\$2,605,416	\$2,605,416	\$0	\$80,787
General Fund	\$0	\$2,605,416	\$2,605,416	\$0	\$80,787
Cash Fund	\$0	\$0	\$0	\$0	\$0
Federal Funds	\$0	\$0	\$0	\$0	\$0

- **Consequences if not Funded -**

If not approved, the many benefits otherwise achieved, including more effective recruiting and onboarding tools, are abandoned in favor of legacy systems amidst a staffing crisis that should be confronted with every resource. The perceived savings from not funding the request will be eclipsed by the ongoing silent costs of high turnover, lost productivity, and lost institutional knowledge.

- **Change Management** - Change management will use the tried and proven method that Kronos uses worldwide. During the “Collaborate Phase” where a partnership begins the process to acclimate change agents and practitioners to the new software solution. This approach is proven to gain full Adoption of the software solution to effectively deploy the solution to the end users.

Both instructor-led training and virtual training will be leveraged to gain the best real-time training experience along with the ability to work independently to support the software solution adoption.

A full testing strategy will be deployed that includes user acceptance testing, data migration testing, and system integration testing. This test plan has been developed and approved by other Colorado agencies that have more near-term implementations.

A full communication plan is provided throughout the implementation to continuously keep users and management informed as to the project progress and issue resolution.

- **Alignment with OIT Best Practices and Standards** - This solution leverages the OIT best practices that are currently in place and being implemented by multiple Colorado agencies.
- **Procurement** - OIT currently holds the Kronos Master Contract and will drive procurement needs.
- **Disaster Recovery and Business Continuity** - This solution is managed in a SaaS Cloud solution so Disaster Recovery and Business Continuity are not a risk.
- **Accessibility Compliance** - Kronos is dedicated to the philosophy that accessibility is a core principle. Kronos' solutions meet the World Wide Web Consortium Accessibility Guidelines (WCAG) 2.0 Level AA to support users of all abilities. Users with visual or mobility impairments are able to navigate the solution with ease by taking advantage of options such as VoiceOver (VO), Zoom, and Invert Colors. These accessibility points meet Section 24-85-103, C.R.S. criteria to set and maintain non-visual access standards for IT systems statewide.

ADDITIONAL REQUEST INFORMATION	
Please indicate if three-year roll forward spending authority is required.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is this a continuation of a project appropriated in a prior year?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If this is a continuation project, what is the State Controller Project Number?	
If this request effects another organization, please provide a comfort letter.	
Please attach a letter from OIT indicating review and approval of this project	

ESTIMATED PROJECT TIME TABLE		
Steps to be completed	Start Date	Completion Date
Phase I - Plan, Assess, Build, Test & Verify	July 1, 2023	June 30, 2024



FY 2023-24 IT Capital Request

FY 2023-24 – DOR IT Capital Priority: #1 Specialized Business Group Licensing and Case Management Software

Summary of Request	Total Funds	CCF-IT	Cash Funds	Reappropriated Funds	Federal Funds
FY 2023-24	\$1,000,000	\$1,000,000	\$0	\$0	\$0
FY 2024-25	\$9,000,000	\$9,000,000	\$0	\$0	\$0
FY 2025-26	\$150,000	\$0	\$150,000	\$0	\$0

System Replacement (costs escalating, failing technology, software or vendor support ended, or new technology, <i>e.g.</i> , DRIVES, CHATS)	System Enhancement Regulatory Compliance (new functionality, improved process or functionality, new demand from citizens, regulatory compliance, <i>e.g.</i> , CBMS)	Tangible Savings Process Improvement (conscious effort to reduce or avoid costs, improve efficiency, <i>e.g.</i> , LEAN, back office automation)	Citizen Demand "The Ways Things Are" (transformative nature of technology, meet the citizens where they are, <i>e.g.</i> , pay online, mobile access)
---	--	--	---

Select One: Categories of IT Capital Projects (most are driven by one category with components of all)

Request Summary: System Replacement

The Department of Revenue (DOR) requests licensing and case management software for the Marijuana Enforcement Division (MED) and the Specialized Business Group (SBG). The current contract term will expire June 30, 2024, with options to extend for periods of one year or less through June 30, 2026. The total amount requested for implementing a new system is a one-time cost of \$10 million, with an annual cost that is \$150,000 more than the current licensing system's annual cost. The current licensing system is limited in online application capabilities and translation services (DOR's Wildly Important Goals (WIGs) 1 and 2). A new system may have the ability to expand on the online services and translation services being offered now, which would increase the ability of MED and SBG to support and serve the diverse customer base.

The schedule for this project would commence with a solicitation if funding is secured for July 2023. The project schedule will include solicitation, contract, analysis and software requirements, design, development and testing preparation, training, communication and documentation, and cutover.

The stakeholders for this project are the SBG divisions: Auto Industry Division (AID), Division of Gaming (DOG), Liquor and Tobacco Enforcement Divisions (LED), the Division of Racing Events (Racing), the MED, the Emissions Division within DMV (Emissions), and the Lottery Division (case management system only). Additional stakeholders are all customers served by our licensing functions in MED, SBG, and Emissions.

The request to use IT capital funds for a new licensing and case management system is based on procurement rules and guidelines. Figures obtained through previous market research indicate that the divisions do not have sufficient funds in current cash reserves to secure a new system. If the funding request is not approved, the impacted divisions would need to deplete any remaining fund balances and significantly increase fees. This would increase the statewide level of TABOR revenue (except the MED revenue increases which are TABOR-exempt). The AID's fees would increase by 12 percent. The LED's fees would increase by 17 percent. The MED's fees would increase by 28 percent. For Emissions, more costs would be charged to the Highway User Tax Fund. The increase in costs for DOG and Lottery would result in reduced annual distributions to beneficiaries. Racing would collect more of the source market fee revenue to cover the cost. The table below shows the cost of implementation per division:

Division	FY 2023-24	FY 2024-25	Division Total
Emissions	50,292	452,626	502,918
AID	41,615	374,531	416,146
LED	51,440	462,964	514,404
Racing	49,846	448,616	498,462
DOG/Gaming	327,409	2,946,679	3,274,088
DOG/Sports Betting	73,433	660,900	734,333
MED	355,965	3,203,683	3,559,648
Lottery	50,000	450,001	500,001
Fiscal Year Total	1,000,000	9,000,000	10,000,000

Project Description:

The current licensing and case management systems are being reviewed for potential replacement based on procurement rules. The current contracts for the licensing and case management systems will expire in June of 2024 with two available options to extend for a period of one year or less. The licensing system currently performs all MED, SBG, and Emissions licensing functions and is a case management system for MED and AID. The current case management system provides case management for the DOG, LED, Racing, and Lottery. The current systems do not interface to transfer data between the two, resulting in duplicate entries and errors in records and data. The ideal solution would be to have one system capable of all licensing and case management functionality with enhanced support for online submissions, processing of applications in languages other than English, and a robust reporting system.

- **Systems Integration Opportunities** – A new system that functions as a licensing program and a case management program would reduce staff time spent performing duplicative entry, tracking, and processing tasks. The ability to submit online applications is critical for MED and SBG. The submission of online applications has reduced the errors seen in applications, resulting in fewer delays in the review and approval process.

- **Current system dependencies –**

- **Data interfaces** - Colorado Department of Human Services (CDHS) child support service API to transmit information regarding compliance with child support obligations.
- **Funding** - Each division covers hosting, annual maintenance costs, and consulting with an existing vendor.

Risks and Constraints –

- **Risk** - Based on the market research done in 2019, DOR is unsure whether or not there is one system that can meet the needs of a licensing and case management system. The solicitation will include both licensing and case management functionality. If one system is unable to meet these needs, the Department may need to award to multiple vendors or solicit separately for a case management system.
 - **Risk** - A new system must be in place by July 1, 2026. The impact of not having a new system operational would halt all licensing abilities in MED, SBG, and Emissions.
 - **Constraint** – The current staffing levels within MED and SBG are such that staffing for implementation and overall management of the system moving forward is limited and may result in implementation failure.
- **Operating Budget Impact** – The annual cost of a new system is anticipated to be \$150,000 higher than the current licensing system’s annual costs.

Background of Problem or Opportunity:

MyLicense Office (MLO) is the licensing database and records management system of record for the following DOR agencies: MED, the DOG, the LED, Racing, AID, and Emissions. The MED also currently utilizes MLO as its Case Management System, which catalogs all regulatory and criminal investigations. MLO has served as MED's licensing database since the organization was initially formed as the Medical Marijuana Enforcement Division in 2010. At the time, the system was in use by the DOG. The MLO contract expires on June 30, 2026, and will require a competitive solicitation process.

Absent funding for the project, the divisions risk losing licensing software capabilities. The divisions will need to halt licensing services or engage in manual intake and processing of applications and license issuance. At a minimum, this will create a significant backlog and delays in services, and consequently, negative impacts on customers who rely on timely licensing services to maintain their employment in their respective industries.

Further, as the Colorado Constitution and statute impose deadlines on some divisions to process applications, divisions are at risk of non-compliance (e.g. The Colorado Constitution and Colorado Marijuana Code impose a 90-day deadline to act on new Retail Marijuana Business applications). Additionally, divisions may need to reduce or eliminate certain services, programs, and initiatives to divert the resources required to fund the project. This approach would involve divisions reviewing all services, programs, and rule allowances that are discretionary in nature to evaluate the extent to which any such rule allowance, program, or service should be eliminated to conserve resources.

As part of identifying alternative funding sources for the project, the divisions are likely to pursue significant and comprehensive fee increases. Absent funding for this project, DOR would need to request

approval from the State Purchasing Office to extend the current sole source contract for maintenance and support of the existing system. Extension of the sole source contract would limit the opportunity to implement current technology with more robust functionality. DOR planned to request funding to solicit for a licensing system in 2020 but instead had to request approval from the State Purchasing Office to extend the sole source contract due to the COVID pandemic and resulting budget cuts. In that request, DOR agreed to not unnecessarily delay the preparation/publication of a solicitation when funds became available.

MLO is now required to handle an expanded scope of licensing files that reflect new business structures and investment vehicles with varying sizes and complexity. The current processes are manual, inflexible, and inadequate for the overall future-state goals. In addition, the divisions are using multiple tools (Google Drive, PowerDMS, PSR, etc.) to store and track information typically housed in a single system leading to inefficiencies in processing and managing applications, licensing information, and case-related documentation. Over time there has been an increase in the total number of market participants, which is expected to continue to expand. The current system's lack of robust reporting and tracking capabilities presents challenges for implementing a data-driven approach to operations. These application challenges negatively impact all Public Safety Record (PSR) users, including Lottery and SBG divisions. To gain additional functionality in the current system, the vendor requires additional development costs paid by the division(s).

There is a need to replace the current application with an integrated, versatile, and user-friendly application. Purchasing and implementing such an application would vastly improve the service quality for Coloradoans, local businesses, and DOR.

Justification:

MED and SBG's current WIGs have focused on implementing additional online capabilities for customers. Applying through the ML1 online portal has helped MED and SBG meet the WIG goal of 20 percent online utilization by June 30, 2022. MED and SBG continue to focus on online utilization for 2023, emphasizing the ability to process applications in languages other than English.

Business Process Analysis – The request for a solicitation has been informed by a market research study conducted in 2020 regarding licensing systems, current process reviews conducted in each division, and surveys of current users on the existing system to understand existing gaps.

Cost-Benefit Analysis and Project Alternatives (per H.B. 15-1266) – If DOR does not open an ITN and does nothing, the current contract will expire, and DOR will lose the ability to issue licenses to businesses and individuals in AID, DOG, Emissions, LED, MED, and Racing.

- **Market Research** – A consulting company completed market research for MED and SBG in 2020. The focus was explicitly on licensing systems used around the nation. The research focused on current state capabilities assessment, benchmarking peer licensing and enforcement entities assessment, and a market scan of vendors/implementers' licensing and enforcement solutions assessment.
 - The market analysis found that there is adequate competition in the marketplace to issue a competitive solicitation to acquire a licensing and enforcement solution that meets more of the enforcement divisions and Emissions needs and will increase efficiency, productivity, and stakeholder experience.

Success Criteria and Improved Performance Outcomes – The criteria used to evaluate the success of this project is the actual implementation of a new system. The minimum selection criteria for a new system will meet the existing capability of current systems. It is expected that a new system will have increased capability to implement online solutions, house documents, transfer data between existing systems (if applicable), have some translation capability, and have a more user-friendly interface for external and internal customers.

DOR Licensing software proposed budget		
One time cost over two years \$10,000,000		
The vendor will provide the following, which is inclusive of the overall budget:		
Licensing	Intake application, and issue, track, renew, terminate, change, and deny multiple types of licenses	
Enforcement	Intake complaints, inspect, educate, investigate, and manage cases with multiple types of consequences	
Case Management	Track non-compliances to support licensing and enforcement processes	
Document/Record Management	Scan and/or upload multiple types of documents, pictures, audio, and video files; provide dynamic letter/communication templates; associate all with a single or multiple individuals, businesses, facilities, cases, investigations, complaints, or licenses; and locate associated information	
Back-Office Administration	Accept and process multiple payment types; allocate funds to the appropriate account or accounts, and track time and expenses against an account	
Reporting and Data Analysis	Regular reporting, ad-hoc reporting, and advanced analytics	
Integration	Ability to integrate with financial and other related systems (e.g., Metrc); interoperate (sharing data on demand); and import and export data	
Technical Training Support	Training, documentation, and solution support such as data dictionaries, user guides, etc.	
Implementation Support (either through Vendor or a Vendor Partner)	Provide guidance and support, documentation maintenance, escalation support, testing tools, change management support, functional/technical SMEs, and lead end-to-end SDLC (software development life cycle) process (Design, Development, Testing, Training, Cutover, and Post Go-Live stabilization)	
Application Environment Set-up and Hosting	If cloud-based, setting up multiple environments for project dev, testing, training, production cutover, and other costs (e.g., server resources, line hardening, firewall changes, etc.). If on-prem, include all previous costs and include hardware and physical space costs if the excess capacity does not exist	
Recurring costs		
Estimated annual maintenance cost	\$150,000 more than the current licensing system's annual costs	The annual cost would be split across the divisions

Consequences if not Funded – If the project is not funded, the current contract will expire, and MED, SBG, and Emissions will not be able to continue to issue licenses.

Implementation Plan:

This project will impact the current processes and applications that drive licensing, enforcement, records management, and case management across SBG, MED, Emissions (excluding case management), and Lottery (case management only).

- **Change Management** – The project plan has been outlined with the following groups and individuals identified as contributors.
 - Project Plan Roles and Stakeholder involvement
 - Executive Steering Committee
 - Project Sponsor(s)
 - Contract Manager
 - Business Partner(s)
 - Project Manager
 - Change Manager
 - Business Lead(s)
 - Subject Matter Experts
 - Purchasing/Contracts Lead
 - Communications Lead
 - Testing Plan
 - User stories will be developed from the process mapping currently being written.
 - Functional testing is conducted by the system's subject matter experts/super users.
 - The DOR end-user conducts user acceptance testing (UAT), encompassing end-to-end testing.
 - Smoke testing will be used in preparation for go-live in the production environment
 - Training Plan
 - The training plan will involve training all levels of users on the system functionality specific to their needs.
 - The DOR learning management system (LMS) will be utilized to facilitate online learning for DOR employees.
 - External training will be created for the DOR customer and placed on division-specific internet pages.
 - OIT will create the specific URLs and maintain the training on the server.

- **Procurement** – A procurement process can only commence when/if funding is obtained.
- **Disaster Recovery and Business Continuity** – The system is a critical system subject to disaster recovery and business continuity plans. The existing system has both in place, and as a new system is implemented, both plans will be created, reviewed, approved, and implemented.
- **Accessibility Compliance** – Any contractor(s) awarded a contract under the solicitation will meet all accessibility compliance standards.
- **Impact on IT Common Policy (For Statewide OIT Projects Only)** – The new system will impact the existing MOU with CDHS regarding child support compliance. The new system will need to interface with the CDHS system to return information on individuals who do not comply with child support obligations. The anticipated allocation of resources from CDHS will be their OIT team to work with the new vendor in creating an API that works with the existing CDHS interface.

ADDITIONAL REQUEST INFORMATION	
Please indicate if a three-year roll forward spending authority is required.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is this a continuation of a project appropriated in a prior year?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If this is a continuation project, what is the State Controller Project Number?	N/A
Please attach a letter from OIT indicating review and approval of this project	

ESTIMATED PROJECT TIME TABLE		
Steps to be completed	Start Date	Completion Date
Procurement (solicitation and contract)	July 2023	April 2024
Implementation	May 2024	June 2025